FACULTY ATTITUDE, ADOPTION, AND APPLICATION OF TECHNOLOGY IN HIGHER EDUCATION:

IMPLICATIONS FOR DISTANCE EDUCATION POLICY

A Study Funded by The New Economy Research Grant Program

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The University of Hawai'i

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Executive Summary

Introduction

The New Economy Research Grant Program awarded funding in 2003 for this study, the first of its type, to examine faculty use of technology and participation in distance education throughout the University of Hawai‘i system. The use of technology in delivering education plays an important role in The New Economy by increasing educational access and presenting educational opportunities that offer increased flexibility regarding time, place, pace of study, and delivery of instructional content. This is a particularly vital concern in Hawai‘i given the geographical dispersion of the population. The purpose of the study was to explore how faculty attitudes and use of informational technologies affect their participation in distance education delivery. The findings were to be used to generate recommendations for policy development and practice designed to expand educational opportunity throughout Hawai‘i.

The study included 4,534 individuals which consisted of all full- and part-time faculty from all colleges, divisions, professional schools, and programs comprising the 10-campus university system. In addition to the faculty, all system-wide lecturers and graduate assistants with instructional responsibilities for the fall 2003 academic semester were included.

An instrument was developed based on items gathered from the literature and through discussions with faculty representing the UH Community Colleges, UH Hilo, UH West O‘ahu, and UH Mānoa. The instrument was pilot tested, modified, and disseminated in fall 2003 with data collection concluding at the end of February 2004. Three separate mailings combined with an electronic web-based version of the survey yielded 2,048 responses for a 45% return rate. Paper-based responses comprised 86 percent of the total and web-based responses were 14 percent.

Descriptive statistics and background information about the population are provided to develop a profile of the respondents. An ordinal regression was used to answer the following research questions:

- How do respondents who participate in distance education differ from those who do not in their attitude, use, and adoption of technology?
- What characteristics differentiate those who participate in distance education and those who do not?
- What are the barriers to participation most likely to be identified by faculty?

Participation in Distance Education

Across the campuses, about 41 percent of the responding instructional faculty and staff report participating in distance education delivery. Participation within campus units may vary but all units exceed a 29 percent participation rate with the highest participation occurring at Maui (67 percent) and West O‘ahu (63 percent). Campus units with a 40 percent or more participation rate include: Leeward (50 percent), Kapi‘olani (47 percent), Kaua‘i (44 percent), Hilo (43 percent), and Windward (42 percent). Campus units with participation rates between 30 and 40 percent

include: ETC (29 percent), Hawai‘i (36 percent), Mānoa (39 percent), and Honolulu (31 percent).

Among the demographic variables only ethnicity[1], institutional type, and age were found to be significantly associated with the dimension of participation in distance education. The results showed that minorities were less likely than their counterparts to participate in distance education. Among the institutional types (UH Community Colleges, UH Hilo, UH Mānoa, and UH West O‘ahu) participants were more likely to be at UH Mānoa although UHM has a relatively lower percentage of participating faculty than most campuses. Finally, the variable of age had a small effect, showing that for each additional year in respondents' age, participation in distance education increased slightly.

Distance Education Technologies

Five distance education technologies are used among the campuses: cable television, interactive television (e.g., Hawai‘i Interactive Television Services, "HITS"), online/web (e.g., WebCT, Blackboard), videoconferencing, and hybrid[2] methods.

The vast majority of distance education courses delivered through any of the five distance education technologies are taught by faculty who teach only 1 to 2 classes via distance delivery. Results show that the primary distance education technology used by respondents across the campuses is online/web-based followed by interactive television. Respondents at Hilo, Mānoa, and West O‘ahu likewise report online/web-based delivery as the primary mode of distance education delivery while those at the community colleges indicate using interactive television.

Factors Related to Greater Participation in Distance Education

Eleven factors were found to be significantly associated with increasing the likelihood of participation in distance education.

Respondents are more likely to participate in distance education:

- The more they agree that their technology skills are adequate;
- The more they agree that technology is important to conducting their professional work;
- The more they agree that their self-image is enhanced by using technological innovations;
- The more they agree that they have the skills needed to teach distance education;
- The more they agree that the quality of distance education instruction and learning is as good as face-to-face instruction;
- The more they agree that distance education is compatible with their work style;
- The more they agree that distance education is easy to use;
- The more they agree that they are able to see the results of distance educational delivery;
- The more they agree that they have opportunities to first try-out distance education;
- The more importance they assign to using software in their professional work; and

[1] For the purpose of the analysis, ethnicity was recoded into "minority" and "non-minority". Minority includes African-American, Chinese, Filipino, Hawaiian, Hispanic, East Indian, Japanese, Korean, Native-American, Pacific Islander, and Mixed/Other. Non-minority references the Caucasian category.

[2] "Hybrid" combines face-to-face instruction with another distance education technology such as cable or interactive television, online/web delivery, or videoconferencing.

- The more importance they assign to using e-resources in their professional work.

Factors Related to Less Participation in Distance Education
Five factors were found to be significantly associated with non-participation in distance education relative to participation. The results indicate that respondents who are less likely to participate present a pattern of counterintuitive beliefs that appear to support participation in distance education.

Respondents are less likely to participate in distance education:

- The more they agree that resources are available to support their technology needs;
- The more they agree that the institution values distance education;
- The more they agree that distance education is voluntary;
- The more they agree that they can share their experiences in using distance educational technologies; and
- The more they agree that the advantages of distance education outweigh the disadvantages.

Faculty respondents who do not participate in distance education believe that resources are available and that the institution values distance education—they simply do not choose to participate. Efforts to make more training available or to reinforce the importance of distance delivery seem unlikely to change their behavior. Furthermore, they agree that the advantages outweigh the disadvantages suggesting that these respondents do not have a negative view of distance education; rather, participation may not be of interest or may not be in keeping with their approach to teaching or interaction with students. Although respondents' beliefs may appear counterintuitive, resolution of these conflicting views form a pragmatic basis for policy development and discussion.

Other Findings
Technology Use. Among the list of software, hardware, and e-resources applications, respondents identified several software, hardware, and e-resources applications which they deemed as important in enabling them to conduct their professional work. Not surprisingly, word processing software was identified as the foremost application followed by presentation software (e.g., Powerpoint), portable document files (Adobe Acrobat), and spreadsheets. Hardware devices included computers, printers, and external storage.

Email is a key e-resource which respondents use to communicate with students, internal colleagues within the UH system, and external colleagues located at other institutions. Other e-resources include electronic journals, course-related websites, electronic list serves (including bulletin boards and newsgroups), and electronic databases.

Computer and Internet Access. The ubiquitous aspect of computers as a much-used tool is substantiated by 89 percent of the respondents across all campuses having computer access both at home and at work. Eighty-two percent of the respondents have Internet access at work and home with the majority using high-speed connections such as cable (34 percent), T1 lines (28 percent), and DSL (15 percent). Only 14 percent report using dial-up connections. Respondents also reported spending a large amount of time using their computers at work and home in order

to fulfill their professional duties. Sixty-five percent indicated they spend 1 to 5 hours a day using their computers at work followed by 28 percent who say they spend 6 to 10 hours a day doing so. While a larger number of respondents tend to work at the office, many report working at home with 82 percent indicating they spend 1 to 5 hours a day at the computer.

Technology Integration into the Classroom. Email and the selective use of Internet-based resources are among the most commonly used technologies reported by the respondents. Eighty-six percent of respondents report using email to communicate with students while 73 percent indicate using resources from the World Wide Web among the technologies they use in conjunction with their instructional practices.

Other reported web-based activities include: using websites in conjunction with classes (40 percent), posting information on homework assignments or readings (34 percent), posting general classroom information (e.g., syllabus, office hours), 38 percent), providing links to other information (39 percent). Fewer indicated using interactive video (11 percent), streaming media (12 percent), or using a website to post practice exams or exercises (17 percent). Respondents also indicated using CD-ROMs and DVDs (44 percent), and accepting student assignments submitted electronically (34 percent).

Personal Expenditures on Technology to Support Professional Work. A large number of respondents reported using their personal financial resources on technology to support their professional work. Across the campuses, a total of 83 percent of the respondents reported personal spending over the past five years that was related to technology purchases to support their professional work.

The overall average amount spent by respondents was $3,215.49 with most purchases occurring within the $5,000 to $5,499 range. Males at all institutions except Windward Community College, were found to outspend females even at campuses where females outnumber males (Hawai‘i, Kapi‘olani, Leeward, Maui, Hilo).

Policy Implications for the University of Hawai‘i and Higher Education

This study combines survey results and a comprehensive review of policy-related documents to identify a number of core issues underlying faculty participation and non-participation in distance education. These issues center around technology skills, training and development, course design and technical support, intellectual property and copyright, quality of instruction and learning, workload and compensation, and institutional and organizational administration.

Many of these issues intertwine and overlap, presenting further complexity and challenges for university administrators and decision makers in developing effective policies. While a few of these issues are broadly articulated in the UH Distance and Distributed Learning Action Plan (University of Hawai'i, 2003), and the 2002-2010 strategic plan for the UH System (University of Hawai'i Board of Regents 2001-2002 & Office of the President, 2002), several issues remain to be addressed. The interconnectedness of these core issues underscores the challenge in developing policies that will address each issue while facilitating a broader acceptance and understanding of distance education that is compatible with institutional culture and values.

Core issues addressed in the full report include:

- Faculty training and development to develop technology and distance education skills;
- Course design and technological support for faculty to transform instructional materials for the distance education environment;
- Intellectual property and copyright protection of course materials;
- Quality of distance education;
- Expectations regarding participation in distance education; and
- Workload and compensation.

Key Recommendation for the University of Hawai‘i

In addition to the policy recommendations presented in this report, there is one key recommendation that is critical to understanding the scope and depth of faculty participation in distance education: data collection. There is a vital need to have data about participation in distance education collected in a centralized database such as *Banner* which is the current student course registration system used by the University of Hawai‘i. This would allow information to be collected in a timely, accurate, and ongoing manner that would permit deeper analysis. Such information would include: the level and type of courses taught, the mode of distance educational technologies used, faculty (discipline, department, college) who teach the courses, as well as other elements that would provide a better sense of participation in distance education and also allow for examining trends over time.

Conclusion

The success of distance learning is achieved not only from well-conceived programs, well-prepared students, and a solid technology infrastructure and support system, but it also relies upon engaging and developing qualified faculty to participate in delivering instruction through this medium. Much of the success or failure of distance education rests upon how faculty members perceive technology, and the degree to which they assimilate and apply the related technologies. While faculty engage in using selective technologies, the findings of this study indicate that their participation or non-participation in distance education results from factors associated with their use of technology, their attitude toward technology and distance education, their ability to adopt an innovation, and the demographic variables of age, ethnicity, and institutional affiliation. This information may serve to enable institutional decision makers in developing policies that are supportive of faculty and will promote participation in distance education.

Developing distance education policies that meet faculty and institutional needs clearly presents numerous challenges for institutional planning and decision-making processes. Foremost is developing policies that will increase faculty participation in distance education that call for integrated system-wide planning across colleges, departments, and disciplines. Such efforts should be directed toward developing long-range strategic planning that makes distance education instruction an expected component of faculty workload as appropriate to campus and departmental mission, provides increased access and funding for technology needs, develops on-site support units that are housed within colleges and disciplines, addresses copyright and intellectual property issues, and provides fair and equitable compensation.

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FACULTY ATTITUDE, ADOPTION, AND APPLICATION OF TECHNOLOGY IN HIGHER EDUCATION: IMPLICATIONS FOR DISTANCE EDUCATION POLICY

A Study Funded by the New Economy Research Grant Program

Introduction

Distance education plays an important role in The New Economy by broadening educational access and increasing higher educational opportunities. By overcoming the confines of traditional classrooms, distance education offers increased flexibility regarding time, place, pace of study, and delivery of instructional content. Such flexibility is of particular importance in Hawai‘i where the obligation to deliver public higher education extends across multiple islands.

Faculty participation in distance education is the single most critical resource in providing quality instruction, and yet the extent to which faculty participate in distance education has not been extensively researched or explored. The research objective for this study is to examine faculty attitudes, adoption, and application of technology in higher education, and their relationship to faculty participation in distance education delivery.

Background

Technological delivery of distance education provides higher education institutions with new and creative strategies for responding to environmental challenges caused by changing student demographics, shifts in enrollment, diminishing institutional resources, public scrutiny and accountability, and decreased state and federal funding (Duderstadt, 1999; Epper, 2001; Katz, 1999; Schwitzer, Ancis, & Brown, 2001). Increased competition from postsecondary institutions that provide distance educational opportunities has also served to propel institutions towards technology-delivered education in order to compete for students (Selingo, 1998), to target previously untapped marketing segments (Arnone, 2002), to develop flexible and innovative approaches to instruction and learning (Epper & Bates, 2001), and to effectively prepare students for post-graduate employment in a global technology-driven society (Gumport & Chun, 1999; Schwitzer, Ancis, & Brown, 2001; Wilson, 2001).

The number of distance education courses, programs, and enrollments has nearly doubled within a three-year period, as documented by the 1999 report by the National Center for Educational Statistics (NCES). However, the proliferation of these courses and programs among degree-granting postsecondary institutions, stands in sharp contrast to the 6 percent of faculty and staff reported by the NCES in 2002 as participating in distance education. Seeming faculty resistance to adopting and using technologies that enable the delivery of distance instruction poses a growing dilemma for institutions in providing quality instruction in keeping with the increasing number of distance education courses and programs (Schwitzer, Ancis, & Brown, 2001).

The use of technology in delivering education plays an important role in The New Economy by increasing educational access and presenting educational opportunities that offer increased flexibility regarding time, place, pace of study, and delivery of instructional content. This is a particularly vital concern in Hawai‘i given the geographical dispersion of the population. Through distance education, students may now pursue college degrees in a variety of disciplines

previously available only on-site or at one campus. Distance education also encourages and facilitates life-long learning by making education accessible to those who otherwise may not have had other alternatives. Furthermore, the use of technology in delivering education facilitates the University of Hawai‘i’s ability to compete for students; to target previously untapped marketing segments; to develop flexible and innovative approaches to instruction and learning; and to effectively prepare students for post-graduate employment in a global-driven society.

Statement of the Problem

Colleges and universities have embraced distance education as a solution to meet challenges brought by demands for access, reduced state and federal funding, and strained institutional resources. Paralleling the growth of distance educational courses, programs, and enrollments, is the need to have increasing numbers of faculty delivering instruction to ensure continuity and quality of the education being delivered.

The success for any distance education initiative relies on a critical and core resource, namely participating faculty who provide quality instruction. This study attempts to explore the individual behaviors of faculty by examining their attitudes toward the adoption and application of informational technologies within their institutional environment and academic profession, examine how these attitudes affect their participation in distance education courses, and determine the policy implications of these findings for higher education.

Conceptual Grounding of the Study

Faculty have been profoundly affected by informational technologies which have redefined and reshaped their work and roles within the academy (Baldwin, 1998; Croissant, Rhoades, & Slaughter, 2001; Farrington, 1997; Wolcott, 1998). Computers, word and data processing, have helped facilitate faculty research and productivity endeavors. Email has enhanced interaction among faculty by accelerating communication and enabling not just the exchange of ideas, but also text, data, and digitized media that includes sound and visual components. However, while faculty generally have adopted certain technologies to facilitate their work, they have resisted participating in distance education (Betts, 1998; Bower, 2001; Clark, 1993; Dillon & Walsh, 1992; Hayes & Jamrozik, 2001; Olcott & Wright, 1995).

Much of the existing research has focused quite appropriately on student access and student outcomes. The efficacy of distance learning technologies was a necessary first concern in the literature on distance education; however, this study proposes to shift the emphasis to faculty as the primary instruments of delivery. To enhance our understanding of faculty attitude and behavior in this regard, the study is grounded in three theories: diffusion of innovation, social information processing, and impression management.

Diffusion of Innovation Theory. The diffusion of innovation theory (DIT) is based on Everett Rogers’ work on diffusion research and is fundamentally based on communications and interaction between individuals in fixed populations. Rogers (1995) defines diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 5) and identifies DIT’s four main elements as: innovation, communication channels, time, and the social system (p. 10). “Innovation” references an idea, practice, or object perceived as being new by either an individual or another unit of adoption.

Rogers' diffusion theory has been applied to a wide range of organizational and information systems adoption processes (Allen, 2000; Au & Enderwick, 2000; Brancheau & Wetherbe, 1990; Jurison, 2000; Rai, 1998; Riemer-Reiss, 1999; Weenig, 1999), and across multiple disciplines, most notably information technology. The primary concern of innovation diffusion research focuses on how innovations are adopted and why some innovations are adopted at a faster or slower rate than others. Rogers (1995) identifies five perceptual characteristics of innovations that help explain differences in adoption rates: relative advantage (the degree to which an innovation is perceived as better than those currently in use), compatibility (its perceived consistency with the existing values, past experiences, and needs of potential adopters), complexity (its degree of difficulty to understand or to use the innovation), trialability (the opportunity to experiment with it on a limited basis), and observability (the extent to which the results of the innovation are invisible to others). Rogers also links the relationship between user values and adoption of technology through classifying adopters in five categories: innovators (venturesome), early adopters (respectable), early majority (deliberate), late majority (skeptical), and laggards (traditional). These categories have served as a means of identification and comparison.

In the case of this study, the five DIT technology adoption and adopter categories provide a basis for identifying corresponding categories of faculty and corresponding characteristics of their department, discipline, and institution that comprise their respective academic culture. For example, faculty who readily adopt technology may be classified as "innovators" along with the prevailing academic culture. Faculty who are "laggards" may be shown to approach innovation at "the slow pace of a crawl" (Rogers, 1995, p. 250). In this vein, faculty and their respective academic cultures may display characteristics that conform to Rogers' technology adoption categories.

The application of DIT to understanding user adoption of technology provides a foundational framework for this study that enables closer scrutiny of the role that organizational and social elements play in affecting faculty adoption and implementation of technology. To further extend DIT's focus on individual behavior and corresponding variables, two additional theories are proposed to undergird the DIT: social information processing, and impression management.

Social Information Processing Theory. Understanding faculty adoption and use of technology may also be facilitated by considering the effect of social influence and more specifically, Social Information Processing Theory (SIPT). The study of social influence processes is embedded in the field of social psychology and focuses on studying the various ways that people influence each other, and the role of cognitive, motivational, and affective mechanisms in these processes (Forgas & Williams, 2001). Influence based on personal information refers to people being affected by their own observations of what they have said and done in the past, while influence based on social information refers to people being affected by their observations of others' attitudes and behaviors (Iyengar & Brockner, 2001).

While social influence has been the genesis for various theories and findings, one such theory, Social Information Processing Theory (SIPT), has particular usefulness for examining faculty adoption and use of technology. According to SIPT, social information influences individual

attitudes and behaviors and once individuals have behaviorally committed to a situation, they tend to develop attitudes consistent with their commitment (Salancik & Pfeffer, 1978). "Individuals adapt attitudes, behavior and beliefs to their social context and to the reality of their own past and present behavior and situation" (Salancik & Pfeffer, 1978, p. 256). Other studies suggest that having a group of experienced individuals to inform users of the positive and negative aspects of technology usage will generate realistic expectations among the users which will subsequently yield increased technology usage (Salancik & Pfeffer, 1978; Taylor & Todd, 1995).

Impression Management Theory. The study of impression management has formed a body of research in the area of social psychology (Schlenker, 1980; Schneider, 1981). Broadly stated, IMT "involves the study of self-concept, social identity, the relationship between the person and society, and the ways in which people influence themselves and others" (Schlenker, 1980, pp. 6-7). Schneider (1981) defined impression management as "an attempt by one person (actor) to affect the perceptions of her or him by another person (target)" (p. 25).

IMT's application has transferred to other disciplines but most notably has been applied to observing behaviors in organizational settings (Giacalone & Rosenfeld, 1989). Studies have applied IMT to a wide range of organizational areas and behaviors among which include those concerning leadership (Leary, 1989; Liden & Mitchell, 1989), interviewing (Fletcher, 1989), and performance appraisal (Villanova & Bernardin, 1989). While IMT application is quite prevalent in organizational settings, research is limited as to its application in educational environments, particularly in higher education.

IMT allows for examining faculty adoption and use of technology on an individual-level focusing on self-perception and the enhancement of self-image. For example, the use of technology may be perceived as valuable or prestigious, or may enhance one's self as being more knowledgeable or competent.

Method

Research Design

This is a case study of faculty in the University of Hawai'i system and employs survey research design. The survey instrument was designed to gather information about faculty adoption and use of technology and draws upon items found in the literature relevant to the technology-related experiences and perceptions of faculty in higher education. The research design for this study also incorporates the use of secondary data to allow for comparisons between by faculty from the University of Hawai'i with faculty nationwide. The secondary data source is derived from the 1999 National Study of Postsecondary Faculty (NSOPF:99) conducted by the National Center for Educational Statistics which offers a comprehensive examination of postsecondary faculty life. The NSOPF:99 is a national representative sample of the faculty throughout the U.S. which included 960 institutions and 28,575 full- and part-time faculty employed at those institutions. Technology-related elements comprised a minor component of the study so comparisons drawn between University of Hawai'i and NSOPF:99 respondents are confined to the parameters of the data.

Human Subjects Protection
A formal application to conduct this study was filed with and approved by the UH Committee on Human Subjects (CHS) to protect all subjects associated with this study and to permit the design and dissemination of the survey instrument.

In conducting this study, careful attention and stringent precautions were taken to protect and ensure the confidentiality of all respondents. Responses have been stripped of individual identifiers so they can neither be attributed to nor associated with specific individuals, their positions, or departments.

Instrumentation
A survey was developed using items that were drawn from the literature relevant to the technology-related experiences and perceptions of faculty in higher education. Discussion sessions were also conducted with University of Hawai‘i faculty in the course of developing the survey. The purpose for the discussions was threefold: to discuss issues of interest to faculty on the survey, to ensure that the items reflected the concerns of faculty, and to discover any additional or previously unidentified concerns that the principal investigator may not have anticipated. To facilitate discussion and to ensure that a broad spectrum of faculty from the ten campuses was represented, six discussion groups were formed. These groups included two from the research university, two from the liberal arts baccalaureate II granting universities, and two from the community colleges. Each group was comprised of resident faculty from the corresponding campus.

Survey questions were grouped around four broad dimensions concerning technology and distance education: technology use, attitude toward technology, attitude toward distance education, and adoption of innovations. To address these dimensions, 129 items were incorporated. A five-point Likert scale was employed by respondents to indicate either the level of importance (1 = not important, 2 = somewhat important, 3 = important, 4 = very important, 5 = essential) or the level of agreement (1 = no agreement, 2 = slightly agree, 3 = moderately agree, 4 = strongly agree, 5 = complete agree). Respondents were also provided with a Not Applicable (NA) and Don’t Know (DK) response.

Respondents were also asked questions concerning their computer use and internet access, technology expenditures, integration of technology in class instruction, professional workload (e.g., instructional, research and scholarship, professional growth, administration, service) and other questions seeking demographic information (e.g, faculty and tenure status, classification, rank, sex, ethnicity, years of service). Demographic data enable investigators to: 1) determine whether the respondents were representative of their population, 2) enable comparison between demographic groups, and 3) allow comparison of respondents against their counterparts nationwide.

Piloting the Survey Instrument
The research design for this study incorporated both a paper- and web-based survey component as alternative means for respondents to submit their responses in order to facilitate a robust response rate. The electronic web-based survey was created using “Perseus Survey Solutions

Profession"[3], a survey development software specifically designed for online dissemination and data collection. The paper and electronic survey instruments were tested and piloted among six subjects from the target population. Feedback from the pilot group resulted in modifications to both versions of the survey prior to dissemination.

Population and Data Collection

The target population of 4,534 individuals for this study consisted of all full- and part-time faculty from all colleges, divisions, professional schools, and programs comprising the 10-campus university system with instructional responsibilities for the fall 2003 academic semester. The faculty members are classified as instructors, researchers, specialists, and librarians. In addition to the faculty, all system-wide lecturers and graduate assistants were included.

The survey-return envelopes were coded to enable subsequent mailings to improve the response rate. Once the encoded envelopes were matched to the respondent, the respondents' names were removed from the mailing list and the envelopes were destroyed so the confidentiality of individual responses could be ensured.

The survey was disseminated in fall 2003 with a total of three mailings conducted during a seven-week period from mid-September 2003 to mid-November 2003. Data collection of paper- and electronic-based responses was suspended at the end of February 2004. The mailings, in combination with the data collection from the web-based version of the survey, yielded 2,048 responses for a 45% return rate. Paper-based responses comprised 86 percent of the total with web-based responses at 14 percent. Table 1 displays the response rate and type of response-submission format (paper- or web-based) by campuses.

Table 1. Number and Percent of Respondents by Campus

Campus	Population	Useable Responses			Percent of Total Responses	Response Rate by Campus
		Paper	Web	Subtotal		
UH Community Colleges	1,342	540	95	635	31.0%	47.3%
Hawai'i	164	81	9	90	4.4%	54.9%
Honolulu	206	83	15	98	4.8%	47.6%
Kapi'olani	367	130	28	158	7.7%	43.1%
Kaua'i	103	46	9	55	2.7%	53.4%
Leeward	241	94	16	110	5.4%	45.6%
Maui	155	65	10	75	3.7%	48.4%
Windward	80	35	6	41	2.0%	51.3%
Emp. Train Ctr (ETC)	26	6	2	8	0.4%	30.8%
UH Hilo	259	89	17	106	5.2%	40.9%
UH Mānoa	2,872	1,035	160	1,195	58.3%	41.6%
UH West O'ahu	48	18	2	20	1.0%	41.7%
Blank	--	84	8	92	4.5%	--
TOTAL	4,521	1,766	282	2,048	100.0%	--

[3] Distributed by Perseus Development Corporation, Braintree, Massachusetts. Company website is located at http://www.perseus.com

Tables 2 and 3 display a further breakdown of the number and percentage of responses received by campus and respondents' locus of appointment.

Table 2. Number of Responses and Percentage by Respondents' Locus of Appointment for UH Community Colleges, UH Hilo, and UH West O'ahu

Campus and Locus of Appointment	Number of Respondents	Percent of Respondents
UH Community Colleges		
Academic Support	42	6.6%
Arts & Humanities	69	10.9%
Language Arts	74	11.7%
Natural Sciences	70	11.0%
Student Affairs/Services	39	6.1%
Social Sciences	31	4.9%
Technical Occupational	116	18.3%
Other	47	7.4%
Split Appointments	30	4.7%
Blank	117	18.4%
TOTAL	635	100.0%
UH Hilo		
College of Agriculture, Forestry, and Natural Resources Mgmt	6	5.7%
College of Arts & Sciences		
School of Business	8	7.5%
Humanities Division	21	19.8%
Natural Science Division	24	22.6%
Social Sciences Division	23	21.7%
College of Hawaiian Language	4	3.8%
Student Affairs	7	6.6%
Other	4	3.8%
Split Appointments	7	6.6%
Blank	2	1.9%
TOTAL	106	100.0%
UH West O'ahu		
Business Administration	4	20.0%
Humanities	4	20.0%
Public Administration	1	5.0%
Social Sciences	6	30.0%
Student Services	1	5.0%
Other	2	10.0%
Split Appointments	2	10.0%
Blank	0	0.0%
TOTAL	20	100.0%

Table 3. Number of Responses and Percentage by Respondents' Locus of Appointment for UH Mānoa Campus

Campus and Locus of Appointment	Number of Respondents	Percent of Respondents
UH Mānoa		
College of Arts & Sciences		
Arts & Humanities	114	9.5%
Languages, Linguistics, & Literature	114	9.5%
Natural Sciences	131	11.0%
Social Sciences	97	8.1%
College of Business Administration	36	3.0%
Travel Industry Management	4	0.3%
College of Education	112	9.4%
College of Engineering	25	2.1%
College of Health Sciences & Social Welfare		
School of Medicine	136	11.4%
School of Nursing	37	3.1%
School of Social Work	15	1.3%
College of Tropical Agriculture and Human Resources	101	8.5%
Outreach College	7	0.6%
School of Architecture	9	0.8%
School of Hawaiian, Asian and Pacific Studies (SHAPS)	15	1.3%
School of Law	12	1.0%
School of Ocean and Earth Science and Technology (SOEST)	79	6.6%
Library Services	32	2.7%
Organized Research Units & Academic Affairs	39	3.3%
Student Affairs	30	2.5%
Other	4	0.3%
Split Appointments	35	2.9%
Blank	11	0.9%
TOTAL	1,195	100.0%

Analyses

This study employs quantitative analysis[4] of the data. The analysis encompasses a two-part approach which begins by gathering descriptive statistics and background information about the population to develop a profile of the respondents. The results, as they apply to the UH respondents, represent true parameters and not estimates as the data reflects responses gathered from a population and not a representative sample. Since the results are true parameters, no t-values or probabilities are reported.

The second part of the analysis then applies ordinal regression statistics to answer the following research questions:

- How do respondents who participate in distance education differ from those who do not in their attitude, use, and adoption of technology?

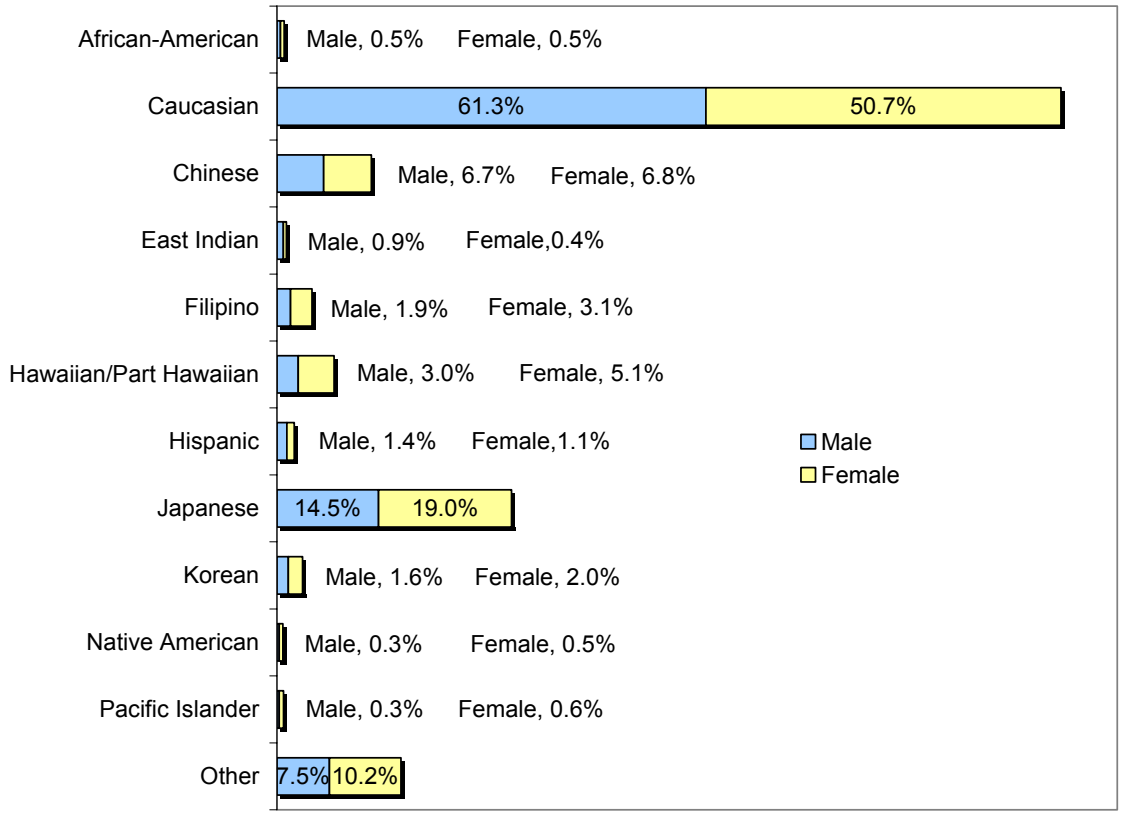
[4] The software used to conduct the analysis included Statistical Package for the Social Sciences (SPSS) for Windows, version 13.0, and SPSS Complex Samples 13.0 module. The SPSS Complex Samples 13.0 enabled analysis of the NCES National Study of Postsecondary Faculty dataset by addressing the stratified sampling and weighted sample sizes of the data.

- What are some of the characteristics (i.e., demographics) between those who participate in distance education and those who do not?
- What are the barriers to participation most likely to be identified by faculty?

Demographics

Demographics of the Respondents. Appendices A through C present demographic information on the respondents by campus beginning with information on gender and ethnicity. As shown in Appendix A, males (51 percent) marginally outnumbered females (49 percent) with Caucasians forming the largest ethnic concentration (56 percent). Figure 1 compares respondents' gender and ethnicity. Females were found to be the majority group within ethnic categories of Filipinos, Hawaiian/Part Hawaiian, Japanese, and Other[5] categories. Males formed the majority group within the Caucasian category. Only slight differences between males and females were found among Chinese, East Indian, Hispanic, Korean, Native American and Pacific Islander groups. African-Americans were found to have equal representation among males and females.

Figure 1. Respondents by Gender and Ethnicity



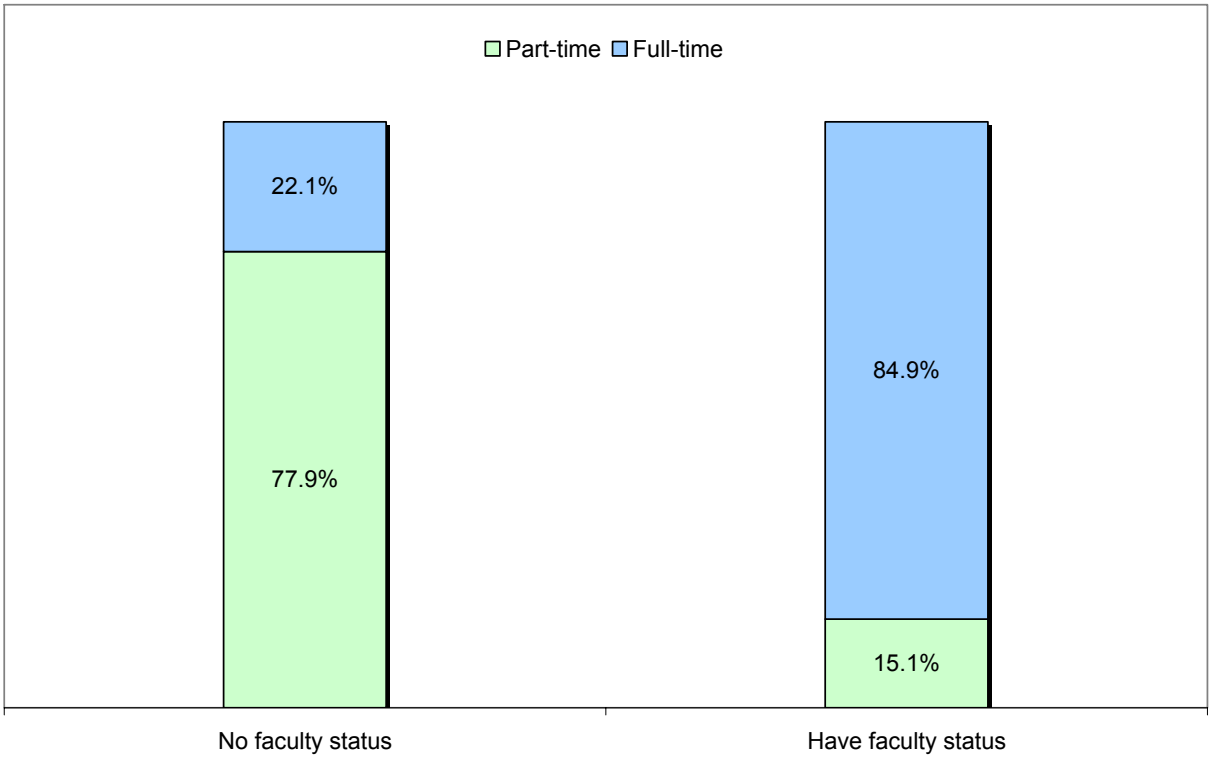
Appendix B displays information concerning the classification, rank, and appointment of the respondents by campus units. The results show the majority of the respondents (64 percent) are instructional with the remainder dispersed among the assorted classification categories.

[5] "Other" category references respondents indicating having more than one ethnicity.

The respondents' rank identifies the top six groups as: professors (23 percent), assistant professors (16 percent), associate professors (15 percent), lecturers (14 percent), instructors (12 percent), and graduate/teaching assistants (9 percent). Information concerning respondents' 9 or 11-month term of appointment shows that overall and by individual campuses, the majority of respondents have a 9-month appointment (56 percent).

Respondents for this study comprised full- and part-time faculty with instructional duties for the fall 2003 semester. Overall, 73 percent of the faculty and staff are employed full-time and 82 percent have faculty status (as of fall 2003). Figure 2 compares respondents by their faculty and employment status. Among those who do not have faculty status, the majority (80 percent) have part-time status. Conversely, among respondents who do have faculty status, the majority (85 percent) are employed full-time. (Disaggregated information by campus is referenced in Appendix C.)

Figure 2. Respondents' Faculty and Employment Status



In comparing the respondents' tenure status, 41 percent had tenure, 45 percent were not tenured, and 14 percent were on tenure track but not tenured. Figure 3 displays respondents' tenure status by gender. Males were found to outnumber females in holding tenured positions (58 percent) and for being on tenure track but not tenured (52 percent). Females were found to be the majority group (54 percent) only within the category of non-tenure track positions.

Figure 3. Respondents by Tenure Status and Gender

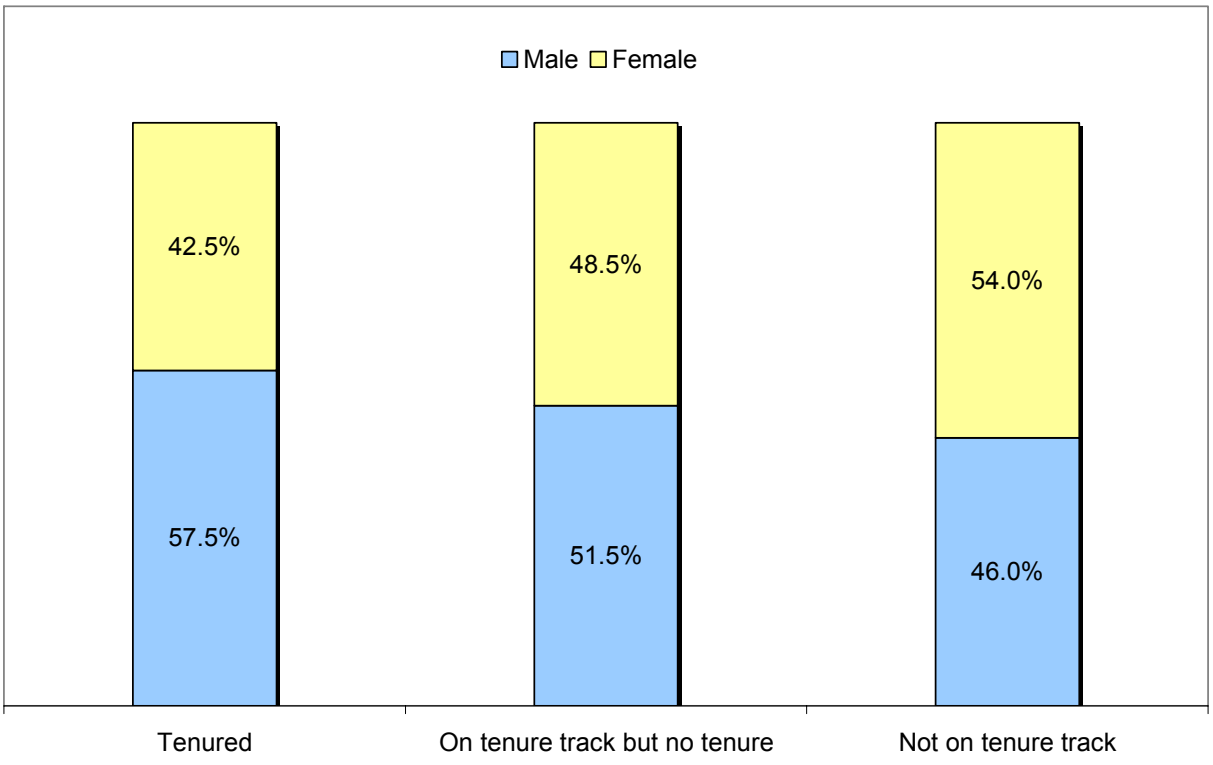
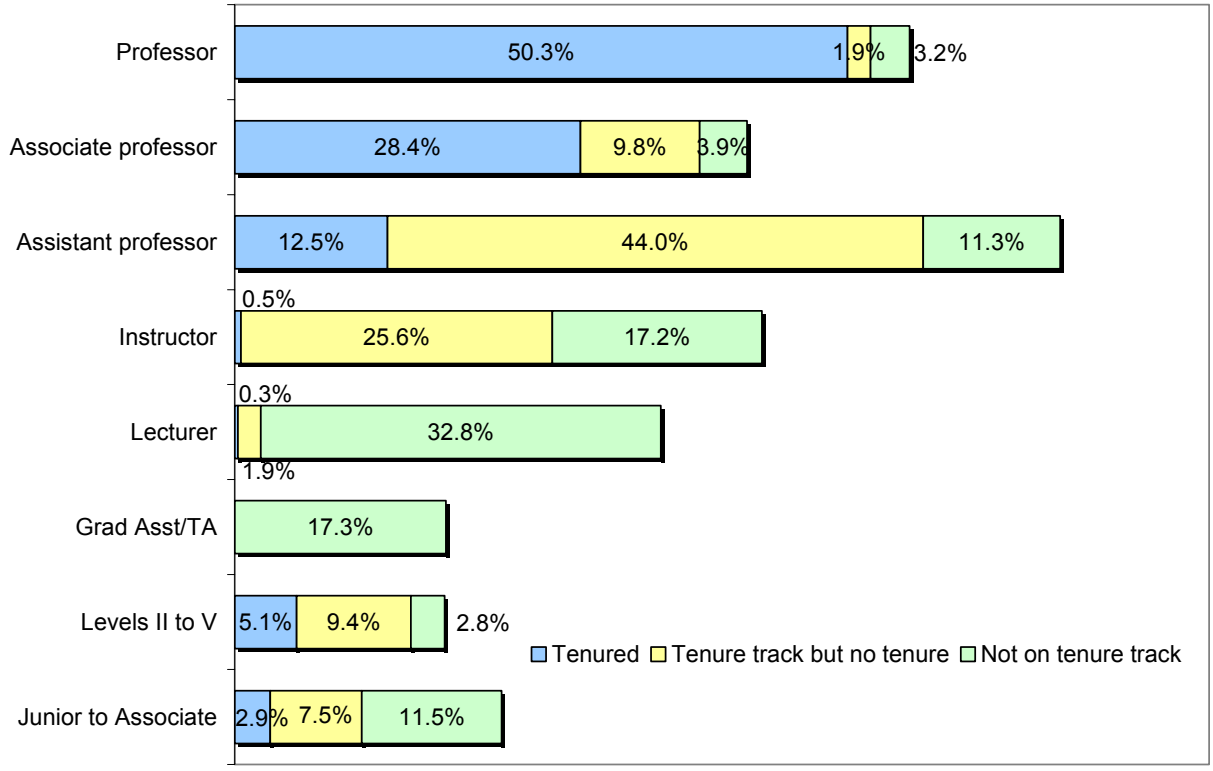


Figure 4 displays the distribution of respondents by their rank and tenure-status. Tenured faculty were found, as expected, to be primarily centered around the professors (50 percent), associate professors (28 percent), and assistant professors (13 percent) with the remaining ranks comprising two percent or less. Among respondents who indicated being on tenure track but were not tenured, assistant professors (44 percent) were the largest group, followed by instructors (26 percent), associate professors (10 percent), and levels II-to-V staff (9 percent). Lecturers (33 percent), followed by instructors (17 percent), and graduate assistants/teaching assistants (17 percent) comprised the major non-tenure track groups.

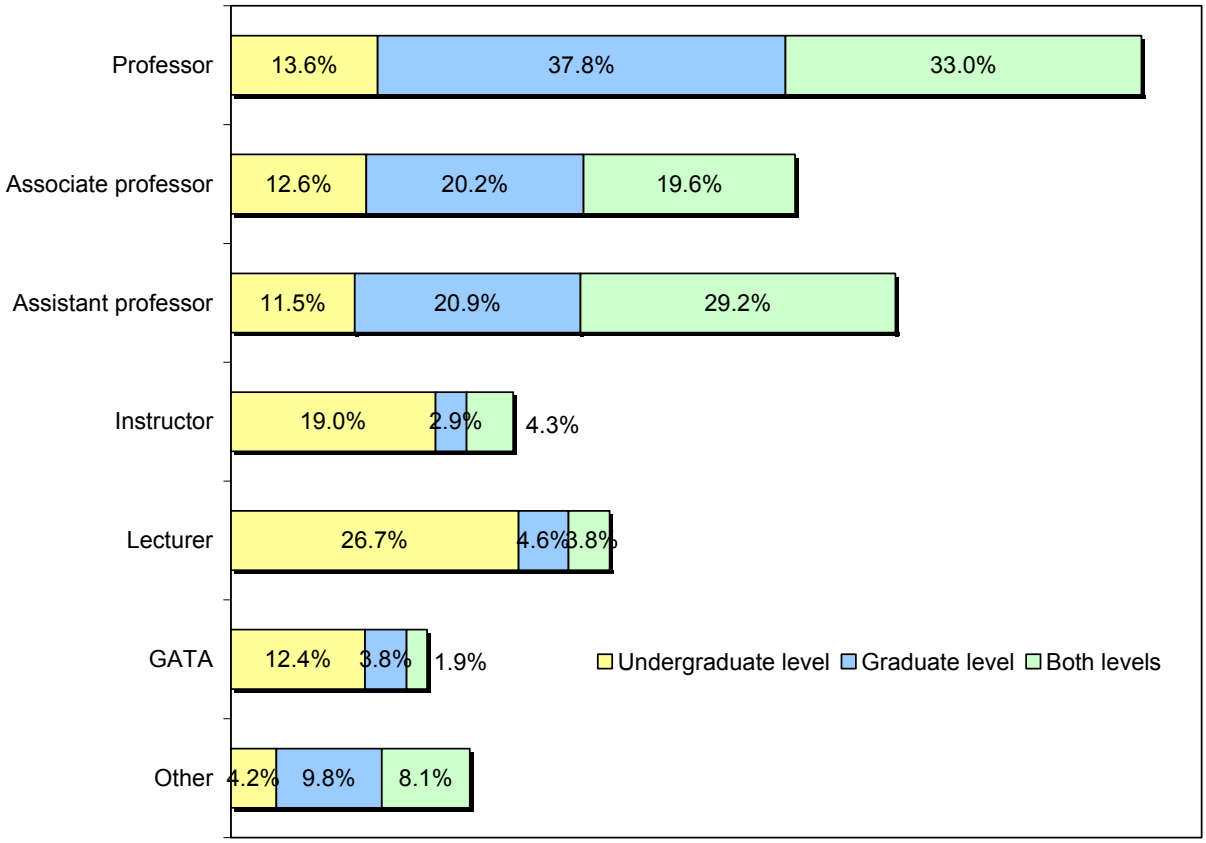
Figure 4. Respondents by Rank and Tenure Status



Nearly half of the respondents (49 percent) teach only undergraduate-level courses, while slightly more than one-quarter (27 percent) teach both undergraduate and graduate-level courses. Just ten percent of the respondents indicate they teach only graduate-level courses. Figure 5 displays the distribution of course-levels by academic rank which shows a large portion of undergraduate-level courses are taught by lecturers (27 percent) and instructors (19 percent). Professors (14 percent), associate professors (13 percent), and assistant professors (12 percent) also report teaching undergraduate-level courses. Graduate assistants/teaching assistants were found to instruct 12 percent of undergraduate-level courses.

The percentage of undergraduate courses taught by professors, associate professors, and assistant professors do not exceed the percentage of those courses taught by lecturers, instructors, and graduate/teaching assistants combined; however, the senior ranks carry the higher percentage of graduate-level instruction. Figure 5 displays the results of respondents' academic rank by level of instruction. Graduate-level instruction is primarily delivered by professors (38 percent), assistant professors (21 percent), and associate professors (20 percent). Collectively, professors, assistant professors, and associate professors account for 79 percent of the graduate-level instruction. In comparison to the other academic rankings, professors (33 percent), assistant professors (29 percent), and associate professors (20 percent) also report a higher overall percentage (82 percent) for providing both undergraduate and graduate-level instruction.

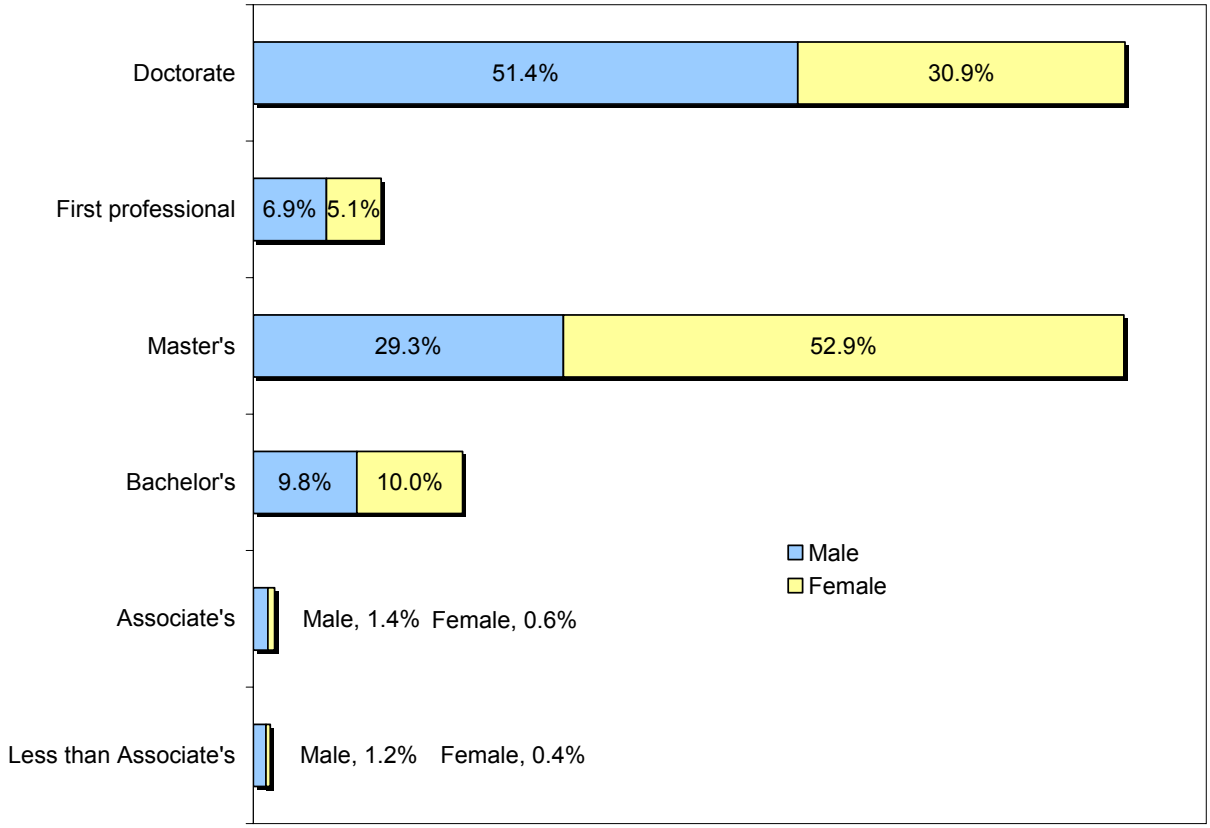
Figure 5. Respondents' Academic Rank by Level of Instruction



When it comes to the educational-level of the respondents, there are slightly more doctoral-degree holders (42 percent) than those with master's degrees (41 percent). Bachelor-degree holders represent 10 percent, with just 6 percent of the respondents indicating they have first professional degrees. Respondents having associate's degrees or less were the smallest represented group (2 percent). The largest number of doctoral and first professional degree holders reside at UH Mānoa and comprise 34 percent and 4 percent of the respondents, respectively. UH Hilo had the second largest group of respondents with doctorates (5 percent) while the majority of master's degree holders (22 percent) are found at the UH Community Colleges.

Figure 6 displays respondents' gender by highest degree obtained. Among respondents holding doctoral degrees, males (51 percent) surpass females (31 percent). The reverse is seen for respondents with master's degrees where the majority of degree-holders are females (53 percent).

Figure 6. Respondents' Gender by Highest Degree



The average percentage of time spent by the respondents for activities within a typical semester by campus is shown in Appendix D. These activities comprise seven categories and include: teaching (undergraduate, graduate or first professional students), research and scholarship, professional development and growth, administrative meetings or committee work, service, and outside consulting and freelance work. Respondents overall reported spending at least 27 to 66 percent of their time on instructional activities with allocations varying by institutional type. The highest percentages were reported at the instructional campuses such as the UH Community Colleges (66 percent), UH Hilo (60 percent), and UH West O‘ahu (59 percent). The lowest reported percentage occurred at UH Mānoa (27 percent). Conversely, institutions with the highest percentages for instructional activities also reported the lowest for research and scholarship, ranging from 5 to 11 percent. UH Mānoa, which reported the lowest percentage (27 percent) among the institutions for instructional activities, had the highest percentage for research and scholarship at 24 percent.

In addition to instructional and research activities, respondents also identified spending time on other endeavors. For example, respondents reported spending time on performing administrative activities, ranging from a low of 10 percent (UH Hilo) to a high of 18 percent (UH West O‘ahu). Respondents also expended between 6 and 10 percent of their time on service-related activities, and between 3 and 7 percent on professional development. They also identified engaging in consulting and freelance work ranging from a low of four percent (UH Mānoa and UH West O‘ahu) to a high of 6 and 7 percent (UH Community Colleges and UH Hilo).

Key Dimensions

Respondents were asked to indicate the level of importance (not important to essential) or level of agreement ("no agreement" to "completely agree") with 129 statements concerning four key dimensions posited to explain their participation in distance education: technology use, attitude toward technology and distance education, and adoption of innovation. Appendix H provides the means and standard deviations of the 129 statements by campus. To represent these four dimensions, 26 scales were constructed from the 129 statements. These scales were analyzed for their internal consistency and all but one of the scales were found to have sufficient alpha coefficients ($\geq$.70) to warrant further analysis. The problematic scale which addressed work incentives for teaching distance education courses (.62) was excluded.

Table 4 provides an overview of the scales which are listed in mean rank order from highest to lowest (alpha coefficients in parentheses). Appendix H provides the means and standard deviations of these scales by campus units. Descriptions of the key dimensions, the corresponding scales, and results are provided on the following pages.

Table 4. Means and Standard Deviations for Key Dimensions

	Mean
*Technology Use Dimension**	
Using hardware equipment in conducting professional work (.82)	3.8
Using e-resources in conducting professional work (.82)	3.5
Using software applications in conducting professional work (.85)	3.0
*Attitude Toward Technology Dimension***	
Technology is important for conducting professional work (.83)	4.1
I expect to be rewarded for using technology (.79)	3.0
Resources are available to support technology needs (.82)	3.0
I am skillful in using technology (.93)	3.0
Using technology has little impact on my career (.68)	3.0
Institution recognizes those who use technology (.79)	3.0
Using technology is stressful (.88)	2.0
*Attitude Toward Distance Education Dimension***	
Distance education training and development is available (.93)	3.0
I am motivated to teach distance education courses (.79)	3.0
Technical support is available for distance education (.90)	3.0
I have distance education instructional skills (.92)	3.0
The quality of distance education instruction and learning is as good as face-to-face (.94)	2.0
The institution values distance education (.86)	2.0
Delivering distance education instruction is stressful (.77)	2.0
*Adoption of Innovation Dimension***	
Participation in distance education is voluntary (.77)	4.0
I am able to share the results of using distance education with others (.92)	3.0
The advantages of distance education outweigh the disadvantages (.85)	3.0
Distance education instruction is difficult (.81)	3.0
I am able to see the results of distance education delivery (.81)	3.0
Distance education is compatible with my work style (.96)	3.0
I am able to try-out distance education before deciding to use it (.86)	3.0
My self-image is enhanced by using technological innovations (.89)	2.0

Note: Alpha coefficients are indicated in parentheses

*1-5 scale: 1= not important, 2=somewhat important, 3=important, 4=very important, 5=essential

**1-5 scale: 1=no agreement, 2=slightly agree, 3=moderately agree, 4=strongly agree, 5=completely agree

Technology Use Dimension. This dimension comprises three scales which measured how much importance respondents' placed on the use of software applications, hardware equipment, and electronic resources (e-resources) in conducting their professional work. A 5-point Likert scale was used to indicate the level of importance (1= not important, 2 = somewhat important, 3 = important, 4 = very important, 5 = essential). The mean results for the three scales showed respondents rated the use of hardware equipment and e-resources as "very important" (4.0 on the 5-point Likert scale) and the use of software applications as "important" (3.0 on the 5-point Likert scale).

Attitude Toward Technology Dimension. This dimension comprises seven scales which measured how much respondents agreed as to: the importance of technology in conducting their professional work, expecting to be rewarded for using technology, the availability of resources to support technology needs, being skillful in using technology, having one's career affected by using technology, being recognized by the institution for using technology, and that using technology is stressful. A 5-point Likert scale was used to measure their level of agreement (1 = no agreement, 2 = slightly agree, 3 = moderately agree, 4 = strongly agree, 5 = completely agree). Results showed that respondents were found to "moderately agree" (3.0 on the 5-point Likert scale) on five of the seven scales: they expect to be rewarded for using technology, resources are available to support technology needs, they are skillful in using technology, using technology has little impact on their careers, and the institution recognizes the use of technology. Respondents were found to "strongly agree" (4.0 on the 5-point Likert scale) technology is important in conducting their professional work, but that they only "slightly agree" (2.0 on the 5-point Likert scale) that using technology is stressful.

Attitude Toward Distance Education Dimension. This dimension comprises seven scales which measured how much respondents agreed as to: the availability of distance education training and development, being motivated to teach distance education courses, the availability of technology support for distance education, having distance education instructional skills, the quality of distance education instruction and learning, the value of distance education to the institution, and the stress involved in delivering distance education instruction.. A 5-point Likert scale was used to measure their level of agreement (1 = no agreement, 2 = slightly agree, 3 = moderately agree, 4 = strongly agree, 5 = completely agree). Results showed that respondents were found to "moderately agree" (3.0 on the 5-point Likert scale) with four of the seven scales: distance education training and development is available, they are motivated to teach distance education courses, technology support for distance education is available, and they have distance education instructional skills. Respondents were found to "slightly agree" (2.0 on the 5-point Likert scale) with the remaining three scales: that the quality of distance education instruction and learning is as good as face-to-face, that the institution values distance education, and that delivering distance education instruction is stressful.

Adoption of Innovation Dimension. This dimension comprises nine scales which measured how much respondents agreed as to: whether participation in distance education is voluntary, their ability to share the results of using distance education with others, the advantages of distance education relative to the disadvantages, the difficulty of distance education instruction, their ability to see the results of distance education delivery, the compatibility of distance education with their personal working style, their ability to try-out distance education before deciding to

use it, and the enhancement of their self-image through using technological innovations. A 5-point Likert scale was used to measure their level of agreement (1 = no agreement, 2 = slightly agree, 3 = moderately agree, 4 = strongly agree, 5 = completely agree). Results showed that respondents were found to "moderately agree" (3.0 on the 5-point Likert scale) on six of the nine scales: they are able to share the results of using distance education with others, the advantages of distance education outweigh disadvantages, distance education instruction is difficult, they are able to see the results of distance education delivery, distance education is compatible with their personal working style, and they are able to try-out distance education before deciding to use it. Respondents were found to "strongly agree" (4.0 on the 5-point Likert scale) that distance education is voluntary, but were found to only "slightly agree" (2.0 on the 5-point Likert scale) that their self-image is enhanced by using technological innovations.

Technology Use

Computer and Internet Use. The ubiquitous aspect of computers as a much-used tool is substantiated by the results shown in Table 5 which identifies 89 percent of the respondents across all campuses having computer access both at home and at work. Over half (52 percent) of the respondents described both their work and home computers as "primary." In addition to having a computer at home and at work, 82 percent of the respondents also have Internet access at work and home with the majority using high-speed connections such as cable (35 percent) and T1 lines (32 percent). Only 15 percent of respondents report using DSL or dial-up connections.

Respondents also reported spending a large amount of time using their computers at work and home in order to fulfill their professional duties. As shown in Table 6, respondents indicated the number of hours they spent using a computer in an average day: 65 percent indicated they spend 1 to 5 hours a day on their computer at work followed by 28 percent who say they spend 6 to 10 hours. While a larger number of respondents tend to work at the office, many report working at home with 82 percent indicating they spend 1 to 5 hours a day at the computer at home.

Table 5. Computer and Internet Access by Campus

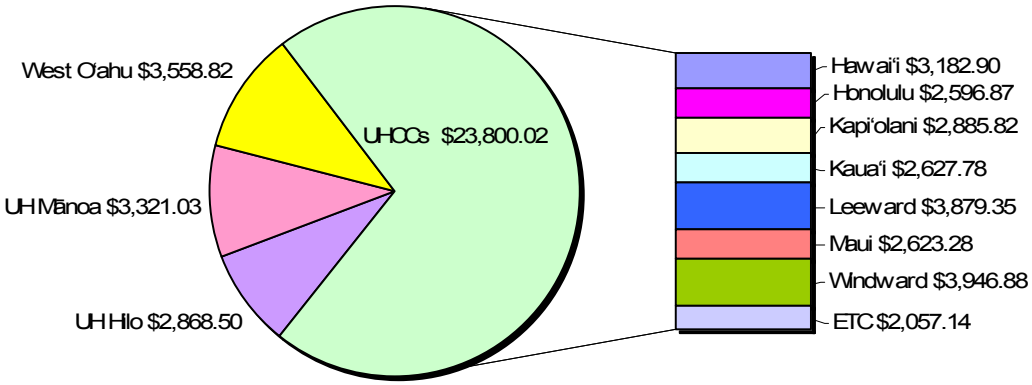
Item	Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West Oʻahu (%)
Computer Access	N=1,951	N=632	N=106	N=1,193	N=20
Both home and work	1,745 (89.4)	559 88.4	90 (84.9)	1,079 (90.4)	17 (85.0)
Work only	154 (7.9)	56 (8.9)	14 (13.2)	81 (6.8)	3 (15.0)
Home only	48 (2.5)	16 (2.5)	1 (.9)	31 (2.6)	0 (.0)
Neither home nor work	4 (.2)	1 (.2)	1 (.9)	2 (.2)	0 (.0)
Internet Access	N=1,948	N=631	N=106	N=1,191	N=20
Both home and work	1,599 (82.1)	516 (81.8)	81 (76.4)	987 (82.9)	15 (75.0)
Work only	266 (13.7)	89 (14.1)	21 (19.8)	151 (12.7)	5 (25.0)
Home only	78 (4.0)	24 (3.8)	3 (2.8)	51 (4.3)	0 (.0)
Neither home nor work	5 (.3)	2 (.3)	1 (.9)	2 (.2)	0 (.0)
Location of Primary Computer	N=1,940	N=629	N=103	N=1,189	N=19
Both home and work	1,001 (51.6)	339 (53.9)	41 (39.8)	610 (51.3)	11 (57.9)
Work only	697 (35.9)	197 (31.3)	44 (42.7)	451 (37.9)	5 (26.3)
Home only	224 (11.5)	87 (13.8)	16 (15.5)	119 (10.0)	2 (10.5)
Neither home nor work	18 (.9)	6 (1.0)	2 (1.9)	9 (.8)	1 (5.3)
Primary Computer's Internet Access	N=1,752	N=559	N=88	N=1,087	N=18
Dial-up	266 (15.2)	116 (20.8)	14 (15.9)	122 (11.2)	1 (5.6)
Cable	620 (35.4)	188 (33.6)	22 (25.0)	381 (35.1)	8 (44.4)
DSL	264 (15.1)	77 (13.8)	13 (14.8)	162 (14.9)	2 (11.1)
T1	556 (31.7)	160 (28.6)	34 (38.6)	323 (29.7)	5 (27.8)
Other	46 (2.6)	18 (3.2)	5 (5.7)	99 (9.1)	2 (11.1)

Table 6. Hours Spent in Average Day Using Computer at Work or Home to Fulfill Professional Duties by Campus

Location	Hours Spent	Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West Oʻahu (%)
		N=1,810	N=577	N=102	N=1,111	N=20
Work	Less than 1 hour	45 (2.5)	24 (4.2)	4 (3.9)	17 (1.5)	0 (.0)
	1 to 5 hours	1,169 (64.6)	411 (71.2)	70 (68.6)	672 (60.5)	16 (80.0)
	6 to 10 hours	512 (28.3)	124 (21.5)	21 (20.6)	363 (32.7)	4 (20.0)
	11 to 15 hours	16 (.9)	4 (.7)	0 (.0)	12 (1.1)	0 (.0)
	16 to 20 hours	27 (1.5)	5 (.9)	5 (4.9)	17 (1.5)	0 (.0)
	21 or more hours	41 (2.3)	9 (1.6)	2 (2.0)	30 (2.7)	0 (.0)
		N=1,481	N=468	N=81	N=917	N=15
Home	Less than 1 hour	115 (7.8)	32 (6.8)	9 (11.1)	74 (8.1)	0 (.0)
	1 to 5 hours	1,216 (82.1)	393 (84.0)	64 (79.0)	744 (81.1)	15 (100.0)
	6 to 10 hours	96 (6.5)	30 (6.4)	5 (6.2)	61 (6.7)	0 (.0)
	11 to 15 hours	19 (1.3)	7 (1.5)	0 (.0)	12 (1.3)	0 (.0)
	16 to 20 hours	22 (1.5)	4 (.9)	3 (3.7)	15 (1.6)	0 (.0)
	21 or more hours	13 (.9)	2 (.4)	0 (.0)	11 (1.2)	0 (.0)

Personal Financial Expenditures to Support Technology Needs. A large number of respondents (83 percent) reported using their personal financial resources over the previous five years on technology that supports their professional work. The overall average amount spent was calculated to be $3,215.49. Figure 7 displays averages by campus which shows a low of $2,057.14 (ETC) to a high of $3,946.88 (Windward CC).

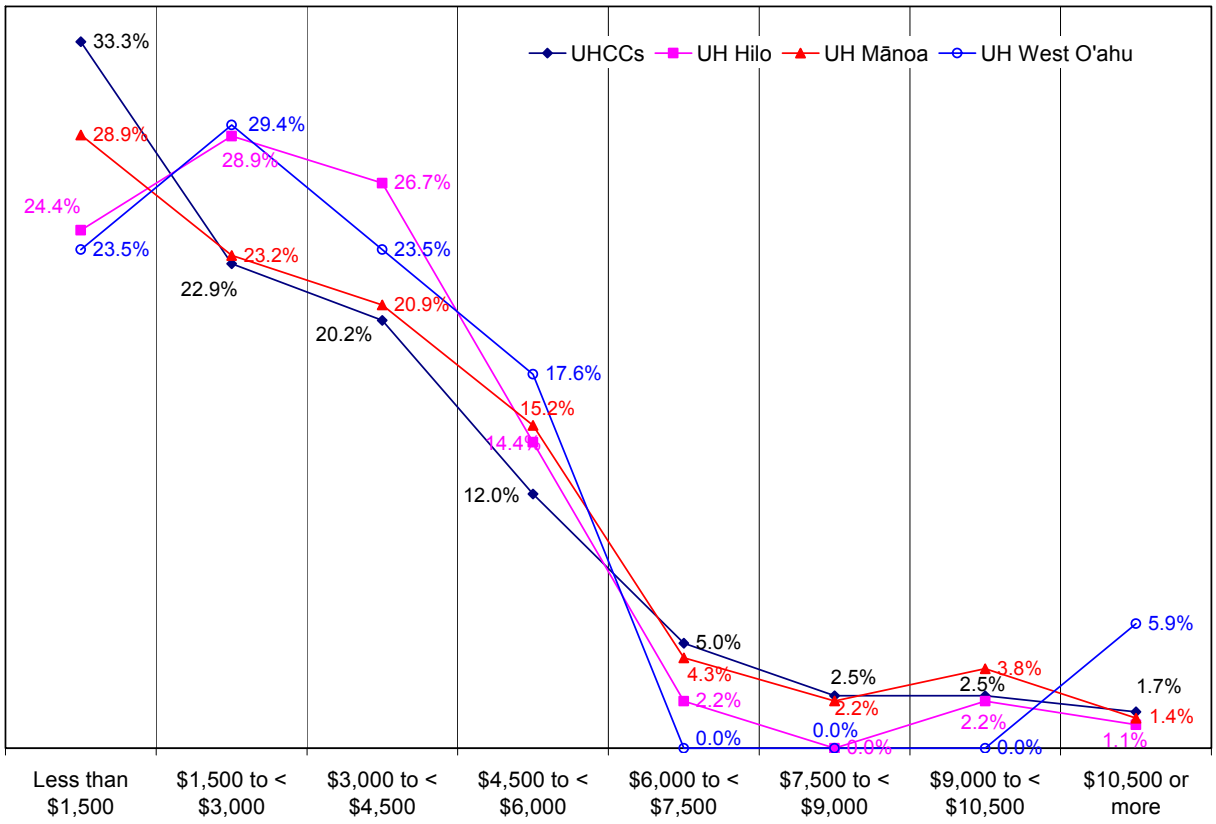
Figure 7. Average Personal Technology Expenditures by Campus Over the Past Five Years



Respondents reported purchase amounts ranging from a low of $2.00 to as high as $72,000.00 over the past five years. The majority (12 percent) of respondents spent from $2,000 to $2,499, followed by 10 percent who reported spending in the $5,000 to $5,499 range, while another 10 percent fell into the $3,000 to $3,499 range.

Figure 8 displays expenditures made by respondents within the past five years across the campuses. The highest expenditures across the campuses occurs within the less-than $1,500 category ranging from a reported low of 24 percent (UH Hilo and UH West O‘ahu) to a high of 33 percent (UHCCs). The next four categories show spending within the $1,500 to $2,999 range (24 percent), the $3,000 to $4,499 range (21 percent), and the $4,500 to $5,999 range. A sudden drop in spending is seen when expenditures reach $6,000 and more.

Figure 8. Range of Personal Technology Expenditures by Campus Units Over the Past Five Years



Males were found at all institutions, except Windward Community College, to outspend females even at campuses where females outnumber males (Hawai‘i, Kap‘iolani, Leeward, Maui, Hilo). Explaining the spending differential between males and females is speculative, however it may be that males unlike females may have greater financial access and resources, may be more willing to use personal funds for technology purchases, and/or may be more likely to make higher-end technology purchases.

Technology Integration in Classroom Instruction. Technology integration into classroom instruction appears to have selective and sometimes limited application across the campuses. As shown in Table 7, the most widely used technology is email, which respondents use to communicate with students (86 percent) followed by using resources from the World Wide Web (73 percent). Respondents also reported using other technologies, although to a lesser degree than email and web-based resources. These technologies include: CD-ROMs and DVDs (44 percent) and accepting student assignments that are submitted electronically (34 percent). Respondents also indicated using a variety of web-based activities including: websites in conjunction with instructional classes (40 percent), posting general classroom information (e.g., syllabus, office hours), (38 percent), and providing links to other information (39 percent), and posting information on homework assignments or readings (34 percent). Fewer indicated using interactive video (11 percent), streaming media (12 percent), or using a website to post practice exams or exercises (17 percent).

Table 7. Technology Integration in Classroom Instruction by Campus

Technology		Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West O‘ahu (%)
Use interactive video	Yes	153 (11.0)	66 (13.1)	13 (14.3)	70 (8.9)	4 (26.7)
	No	1,243 (89.0)	439 (86.9)	78 (85.7)	715 (91.1)	11 (73.3)
Use CD-ROMS or DVDs	Yes	626 (44.3)	224 (43.8)	41 (45.6	353 (44.3)	8 (53.3)
	No	786 (55.7)	287 (56.2)	49 (54.4)	443 (55.7)	7 (46.7)
Use any streaming media	Yes	175 (12.6	62 (12.3)	9 (10.0)	102 (13.1)	2 (13.3)
	No	1,215 (87.4)	444 (87.7)	81 (90.0)	677 (86.9)	13 (86.7)
Use World Wide Web resources	Yes	1,037 (73.3)	370 (72.4)	63 (69.2)	591 (74.2)	13 (81.3)
	No	377 (26.7)	141 (27.6)	28 (30.8)	205 (25.8)	3 (18.8)
Use websites for classes being taught	Yes	567 (40.1)	212 (41.3)	33 (37.5)	315 (39.6)	7 (43.8)
	No	846 (59.9)	301 (58.7)	55 (62.5)	481 (60.4)	9 (56.3)
Use email to communicate with students	Yes	1,216 (85.6)	416 (80.6)	79 (88.8)	706 (88.4)	15 (93.8)
	No	204 (14.4)	100 (19.4)	10 (11.2)	93 (11.6)	1 (6.3)
Accept student assignments that are submitted electronically	Yes	949 (66.8)	322 (62.3)	67 (74.4)	546 (68.5)	14 (87.5)
	No	471 (33.2)	195 (37.7)	23 (25.6)	251 (31.5)	2 (12.5)
Use websites to post information on homework assignments or readings	Yes	479 (34.2)	153 (30.4)	30 (34.1)	290 (36.6)	6 (40.0)
	No	920 (65.8)	351 (69.6)	58 (65.9)	502 (63.4)	9 (60.0)
Use websites to post exams or exam results	Yes	259 (18.1)	105 (20.2)	15 (16.3)	133 (16.6)	6 (37.5)
	No	1,169 (81.9)	416 (79.8)	77 (83.7)	666 (83.4)	10 (62.5)
Use websites to post general classroom information such as syllabus and office hours	Yes	547 (38.2)	190 (36.5)	40 (43.0)	311 (38.8)	6 (37.5)
	No	885 (61.8)	331 (63.5)	53 (57.0)	491 (61.2)	10 (62.5)
Use websites to provide links to other information	Yes	558 (39.0)	206 (39.5)	34 (36.6)	310 (38.7)	8 (50.0)
	No	874 (61.0)	315 (60.5)	59 (63.4)	492 (61.3)	8 (50.0)
Post practice exams or exercises	Yes	240 (16.9)	110 (21.2)	15 (16.1)	110 (13.8)	5 (31.3)
	No	1,182 (83.1)	408 (78.8)	78 (83.9)	685 (86.2)	11 (68.8)

Participation and Non-Participation in Distance Education: UH Compared to National Data

Table 8 displays the number of respondents who indicated that they do or do not participate in distance education as well as comparative data from the National Study of Postsecondary Faculty (NSOPF:99)[6]. Overall, about 41 percent of the UH respondents participate while 59 percent do not participate which is a sharp contrast to the NSOPF:99 respondents who indicate a 6 percent participation and 94 percent non-participation rate.

Among the four campus units, only UH West O'ahu has a majority of respondents who are participants (63 percent) rather than non-participants (37 percent). The percentage of participants among the UH Community Colleges and UH Hilo is within the 43 to 45 percent range, and UH Mānoa is slightly less at 39 percent.

Table 8. Participants and Non-participants in Distance Education

Distance Education	Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West O'ahu (%)	NSOPF:99 (%)
	N=1,810	N=580	N=99	N=1,112	N=19	N=14,602
Participants	746 (41.2)	260 (44.8)	43 (43.4)	431 (38.8)	12 (63.2)	842 (5.9)
Non-participants	1,064 (58.8)	320 (55.2)	56 56.6)	681 (61.2)	7 (36.8)	13,760 (94.1)

Demographics on Participants and Non-participants in Distance Education. Appendix E compares UH and NSOPF:99 participants in distance education with non-participants on several demographic variables including: gender, ethnicity, age, faculty status, employment status, academic rank, tenure status, highest degree, term of appointment, level of instruction, campus, and locus of appointment.

Information concerning gender shows that in comparing males and females both groups are more evenly represented among participants in distance education than among non-participants. That is, the proportion of male participants is only slightly higher than that of females at UH (51 percent) and in the NSOPF:99 (52 percent). Differences among the non-participants is slightly more pronounced with 53 (UH) to 59 (NSOPF:99) percent for males, 41 (NSOPF:99) to 47 (UH) percent for females.

Regarding ethnicity[7], Caucasians form the majority group for both UH and NSOPF:99 participants and non-participants. Although NSOPF:99 represents a higher percentage of African-Americans, American Indian/Alaskan Natives, and Hispanics, UH has a higher percentage for Asian/Pacific Islanders and respondents indicating more than one ethnicity.

[6] Demographic comparisons were conducted between the population of UH faculty with the national respondents and no substantive differences were found other than rank. Results show that UH faculty have a greater proportion of senior ranked faculty than is the case among the respondents to the national survey. For comparison purposes, the UH seven community colleges are represented as one unit.

[7] To allow for comparisons with the NSOPF:99 data, the ethnicity and academic rank categories from the UH study were recoded to align with those in the national dataset.

The majority of UH and NSOPF:99 participants were found to be in the 45 to 54 age group (34 percent and 40 percent respectively). UH non-participants were primarily in the 55 to 64 age group (30 percent) while the largest group of NSOPF:99 non-participants were mostly in the 45 to 54 age group (35 percent). A majority of UH and NSOPF:99 participants and non-participants were also found to have faculty status and full-time employment.

Differences between participants and non-participants are apparent when comparing academic rank. UH participants tend to be full professors (23 percent), associate professors (17 percent), or assistant professors (17 percent). NSOPF:99 participants are primarily instructors (31 percent), professors (22 percent), assistant professors (15 percent), "other" non-instructional category (14 percent), and associate professors (13 percent). For UH non-participants, 23 percent are found in the "other" non-instructional category, with 22 percent ranked as professors followed by lecturers and assistant professors (each 16 percent), and instructors (10 percent). NSOPF:99 non-participants are mostly instructors (30 percent) followed by full professors (20 percent), associate professors (16 percent) and assistant professors (15 percent).

Another distinguishing difference between participants and non-participants lies in their tenure status. Both UH and NSOPF:99 participants are found to be polarized as either having tenure (43 percent for UH, 40 percent for NSOPF:99) or not being on tenure-track (42 percent for UH, 48 percent for NSOPF:99). Participants who identified being on tenure-track but did not have tenure were found to be the smallest represented group (16 percent for UH, 11 percent for NSOPF:99). This may suggest that faculty who are tenure-tracked and engaged in tenure-related activities may be view involvement in distance education as detracting from time spent on tenure-related activities

Doctoral degree holders comprise the largest group of UH participants (45 percent) while among NSOPF:99 participants only 34 percent held doctoral degrees (48 percent). A large percentage of participants for both groups hold master's degrees (40 percent for UH, 48 percent for NSOPF:99). In contrast, the majority of UH non-participants are found to hold master's degrees (41 percent for UH) while the largest group of NSOPF:99 non-participants have doctoral degrees (42 percent).

Additional Demographic Characteristics of UH Respondents . Appendix F provides additional demographic characteristics of UH respondents concerning their term of appointment, level of instruction, campus location, and locus of assignment. The majority of participants and non-participants tend to have 9-month contracts and primarily teach undergraduate-level courses. Participants and non-participants are found to be similarly distributed among the campuses and their locus of appointment.

Other demographic variables were also examined including age, when respondents first began using a computer, years served in higher education, and years as a faculty member. These variables identified differences between participants and non-participants of distance education particularly the year when respondents first began using a computer, with varying results for the other demographic variables.

For example, Table 9 displays the year when participants and non-participants first began using a computer. Overall results show that participants began using a computer two years before non-participants. With the exception of the Hawai'i CC campus and ETC, participants among the

remaining campuses pre-date non-participants in using computers from a low of 1 year (Kapiʻolani CC) to a high of 6 years (Windward CC).

Table 9. Year First Began Using a Computer for Participants and Non-participants by Campus

	Participants	Non-participants	Difference
UHCCs	1985	1987	2 years
Hawaiʻi	1988	1987	1 year
Honolulu	1984	1987	3 years
Kapiʻolani	1986	1987	1 year
Kauaʻi	1985	1987	2 years
Leeward	1985	1988	3 years
Maui	1983	1988	5 years
Windward	1982	1988	6 years
ETC	1985	1982	3 years
Hilo	1982	1984	2 years
Mānoa	1984	1986	2 years
West Oʻahu	1982	1985	3 years
OVERALL	1984	1986	2 years

Other demographic variables such as age, years served in higher education, and years served as a faculty member show smaller overall differences in mean values between participants and non-participants in distance education, yet reveal interesting distinctions among the campuses.

For example, Table 10 displays the age mean values for UH participants and non-participants. While overall there is no discernable difference in age between the groups, age variations are apparent among all the campuses except UH Mānoa and Maui CC. Participants are found to be younger than non-participants ranging from a low of 1 year (Honolulu CC, Kapiʻolani CC, Leeward CC) to 3 years (UH Hilo) and 15 years (ETC). In contrast, participants were found to be older than non-participants at the remaining locations: Kauaʻi CC (1 year), Windward CC (2 years), Hawaiʻi CC (3 years), and UH West Oa'hu (9 years).

Table 10. Age of Participants and Non-participants by Campus

	Participants	Non-participants	Difference
UHCCs	51	51	--
Hawaiʻi	53	50	3 years
Honolulu	51	52	1 year
Kapiʻolani	48	49	1 year
Kauaʻi	54	55	1 year
Leeward	50	51	1 year
Maui	52	52	--
Windward	53	51	2 years
ETC	42	57	15 years
Hilo	51	54	3 years
Mānoa	48	48	--
West Oʻahu	56	47	9 years
OVERALL	51	51	--

The number of years that participants and non-participants had worked in higher education is shown in Table 11.

Table 11. Years Served in Higher Education by Participants and Non-participants by Campus

	Participants	Non-participants	Difference
UHCCs	14	15	1 year
Hawai‘i	14	14	--
Honolulu	15	14	1 year
Kapi‘olani	13	13	--
Kaua‘i	13	17	4 years
Leeward	16	16	--
Maui	15	11	4 years
Windward	13	16	3 years
ETC	14	22	8 years
Hilo	17	16	1 year
Mānoa	15	15	--
West O‘ahu	22	15	7 years
OVERALL	15	15	--

Overall, there is no difference in mean values between participants and non-participants. This includes Hawai‘i CC, Kapi‘olani CC, Leeward CC, and UH Mānoa. Some variation between participants and non-participants may be found among the remaining campuses. For example, participants were found to have fewer years of service at Windward CC (3 years), Kaua‘i CC (4 years), and UH West O‘ahu (7 years). In comparison, non-participants were found to have served more years than participants at locations such as Windward CC (3 years) Kaua‘i CC (4 years), and ETC (8 years).

Key Dimensions by Participants and Non-participants. Table 12 displays comparisons between UH participants and non-participants in distance education on the mean values of the 26 scales comprising the four key dimensions as measured by the level of importance[8] (Technology Use Dimension), or the level of agreement[9] (Attitude Toward Technology Dimension, Attitude Toward Distance Education Dimension, and Adoption of Innovation Dimension).

[8] 1-5 Scale: 1 = not important, 2 = somewhat important, 3 = important, 4 = very important, 5 = essential
[9] 1-5 Scale: 1 = no agreement, 2 = slightly agree, 3 = moderately agree, 4 = strongly agree, 5 = complete agree

Table 12. Means for Key Dimensions for Participants and Non-Participants in Distance Education

	Participants Means	Non-participants Means	Difference in Means
*Technology Use Dimension**			
Using e-resources in conducting professional work	3.64	3.34	.30
Using hardware devices in conducting professional work	3.95	3.72	.23
Using software applications in conducting professional work	3.01	2.79	.22
*Attitude Toward Technology Dimension***			
I am skillful in using technology	3.20	2.66	.54
I expect to be rewarded for using technology	3.22	2.80	.42
Technology is important for conducting professional work	4.34	3.99	.35
Using technology has little impact on my career	2.95	2.77	.18
Institution recognizes those who use technology	2.79	2.75	.04
Resources are available to support technology needs	2.89	2.89	.00
Using technology is stressful	1.87	2.03	-.16
*Attitude Toward Distance Education Dimension***			
I have distance education instructional skills	3.18	1.93	1.25
I am motivated to teaching distance education courses	2.93	2.23	.70
Quality of distance education instruction & learning same as face-to-face	2.51	1.81	.70
Delivering distance education instruction is stressful.	2.17	1.95	.22
Distance education training and development is available	2.73	2.56	.17
Technical support is available for distance education	2.54	2.36	.18
The institution values distance education	2.02	2.18	-.16
*Adoption of Innovation Dimension***			
Distance education is compatible with my work style	3.02	1.79	1.23
I am able to see the results of distance educational delivery	3.12	2.08	1.04
I am able to try-out distance education before deciding to use it	2.81	1.86	.95
Advantages of distance education outweigh disadvantages	3.35	2.58	.77
I am able to share the results of using distance education with others	3.37	2.63	.74
My self-image is enhanced by using technological innovations	2.50	1.90	.60
Distance education instruction is difficult	3.89	2.86	1.03
Participation in distance education is voluntary	3.90	4.22	-.32

*1-5 scale: 1= not important, 2 = somewhat important, 3 = important, 4 = very important, 5 = essential
**1-5 scale: 1 = no agreement, 2 = slightly agree, 3 = moderately agree, 4 = strongly agree, 5 = completely agree

As shown in Table 12, differences in mean values are detectable between participants and non-participants in distance education. While differences were minimal for 14 of the scales, mean values for participants were found to be at least one point higher than non-participants on 10 scales. For example, participants rated the use of e-resources in conducting their professional work as "very important" (4.0 on the 5-point Likert scale) in contrast to non-participants who rated it as "important" (3.0 on the 5-point Likert scale). Participants were also found to "moderately agree" (3.0 on the 5-point Likert scale) on 9 scales in contrast to non-participants who tended to "slightly agree" (2.0 on the 5-point Likert scale): they have distance education instructional skills, they are motivated to teach distance education courses, the quality of distance education instruction and learning is the same as face-to-face technical support is available for distance education, distance education is compatible with their work style, they are able to see the results of distance educational delivery, and they are able to try-out distance education before deciding to use it.

Technology Use and Access of Participants and Non-participants. In addition to noting the differences between participants and non-participants, similarities in technology use are also evident. Table 13 compares computer and internet access and time spent using technology between participants and non-participants. The majority of participants and non-participants indicate they have computer and internet access[10] from work and home. They also identify their primary computers as located at home and work, suggesting that both computers, despite their separate locations, have equal use and importance in enabling both participants and non-participants in conducting their professional work. Large majorities of participants and non-participants also indicate that they spend 1 to 5 hours a day using their work and home computers.

Table 13. Access and Use of Computer and Internet by Non-participants and Participants in Distance Education

	Totals		Participants		Non-participants	
	Freq	%	Freq	%	Freq	%
Computer Access	N=1,875		N=767		N=1,108	
Both home and work	1,669	89.0	716	93.4	953	86.0
Work only	155	8.3	37	4.8	118	10.6
Home only	48	2.6	14	1.8	34	3.1
Neither home nor work	3	.2	0	.0	3	.3
Internet Access	N=1,871		N=765		N=1,106	
Both home and work	1532	81.9	666	87.1	866	78.3
Work only	265	14.2	72	9.4	193	17.5
Home only	69	3.7	27	3.5	42	3.8
Neither home nor work	5	.3	0	.0	5	.5
Primary Computer Location	N=1,864		N=763		N=1,101	
Both home and work	954	51.2	453	59.4	501	45.5
Work only	675	36.2	234	30.7	441	40.1
Home only	219	11.7	72	9.4	147	13.4
Neither home nor work	16	.9	4	.5	12	1.1
Primary Internet Connection	N=1,674		N=714		N=960	
Dial-up	234	14.0	81	11.3	153	15.9
Cable	570	34.1	233	32.6	337	35.1
DSL	252	15.1	105	14.7	147	15.3
T1	474	28.3	216	30.3	258	26.9
Other	144	8.6	79	11.1	65	6.8
Hours Using Computer at Work	N=1,733		N=722		N=1,011	
Less than 1 hour	44	2.5	8	1.1	36	3.6
1 to 5 hours	1,117	64.5	448	62.0	669	66.2
6 to 10 hours	489	28.2	228	31.6	261	25.8
11 to 15 hours	15	.9	6	.8	9	.9
16 to 20 hours	28	1.6	14	1.9	14	1.4
21 or more hours	40	2.3	18	2.5	22	2.2
Hours Using Computer at Home	N=1,416		N=619		N=797	
Less than 1 hour	110	7.8	30	4.8	80	10.0
1 to 5 hours	1,159	81.9	520	84.0	639	80.2
6 to 10 hours	95	6.7	42	6.8	53	6.6
11 to 15 hours	18	1.3	8	1.3	10	1.3
16 to 20 hours	22	1.6	13	2.1	9	1.1
21 or more hours	12	.8	6	1.0	6	.8

[10] This parallels reported Internet access by NSOPF:99 participants and non-participants in distance education. 57 percent of participants and 55 percent of non-participants report having access at work and home

Technology Expenditures of Participants and Non-participants. In addition to demographic considerations between participants and non-participants in distance education, the amount that each group spent on supporting their technology needs indicates a difference between the two groups. Table 14 displays the mean values for technology expenditures made by participants and non-participants to support their professional work. Overall, participants spent an average of $393.05 more than non-participants on technology. Among the campuses, participants from eight institutions outspent non-participants from a low of $273.75 (Maui) to a $2,787.27 (West O‘ahu). In contrast to participants, non-participants at Windward CC, Hawai‘i CC, and ETC spent more than participants from a low of $225.00 to a high of $2,450.00.

Table 14. Technology Expenditure Means of Participants and Non-participants in Distance Education by Campus

	Participants	Non-participants	Difference
UHCCs	$3,240.30	$2,658.19	$582.11
Hawai‘i	$2,763.46	$3,494.10	-$730.64
Honolulu	$3,366.67	$2,320.80	$1,045.87
Kapi‘olani	$3,176.19	$2,219.21	$956.98
Kaua‘i	$2,870.59	$2,318.18	$552.41
Leeward	$4,479.79	$3,171.25	$1,308.54
Maui	$2,777.32	$2,503.57	$273.75
Windward	$2,286.67	$2,541.67	-$225.00
ETC	$600.00	$3,050.00	-$2,450.00
Hilo	$2,976.92	$2,668.11	$308.81
Mānoa	$3,532.65	$3,240.63	$292.02
West O‘ahu	$4,527.27	$1,740.00	$2,787.27
OVERALL	$3,413.02	$3,029.97	$393.05

Technology Integration into Classroom Instruction of Participants and Non-participants. When it comes to integrating technology in classroom instruction, participants in distance education tend to incorporate a wider assortment of technologies than non-participants with the exception of using email to communicate with students. As shown in Table 15, email, electronic submissions, and World Wide Web resources are among the most frequently used resources.

Among UH participants and non-participants, participants demonstrated a higher percentage for using technologies such as interactive video, CD-ROMs or DVDs, streaming media, and World Wide Web resources. A larger percentage of participants were also found to accept student assignments that were submitted electronically (76 percent) than non-participants (58 percent).

In comparing UH and NSOPF:99 participants in distance education, UH participants tended to incorporate more websites (54 percent) and communicate more with students by email (89 percent) than NSOPF:99 participants. In contrast, a larger percentage of NSOPF:99 participants use websites to: post information on homework assignments and readings (67 percent), post exams or exam results (31 percent), post general classroom information such as syllabus or office hours (76 percent), and provide links to other information (86 percent). A closer percentage between UH and NSOPF:99 participants was reported for posting practice exams on websites (UH at 29 percent, NSOPF:99 at 32 percent).

In comparing UH and NSOPF:99 non-participants in distance education, a larger percentage of UH non-participants were found to use email to communicate with students (82 percent) and use websites to post practice exams or exercises (33 percent). However, overall NSOPF:99 non-participants seem to be more inclined than their UH counterparts to use websites as a means for disseminating information to students. For example, NSOPF:99 non-participants showed a larger percentage in using websites for classes (37 percent), posting information on homework assignments and readings (70 percent), posting general classroom information such as syllabus and office hours (81 percent), and providing links to other information (80 percent).

Table 15. Technology Integration in the Classroom by Non-participants and Participants in Distance Education

		Non-participants in Distance Education				Participants in Distance Education			
		U of Hawai'I		NSOPF:99		U of Hawai'I		NSOPF:99	
		Freq	%	Freq	%	Freq	%	Freq	%
Use interactive video	No	667	90.3			519	87.2		
	Yes	72	9.7			76	12.8		
Use CD-ROMs or DVDs	No	451	60.4			301	49.9		
	Yes	296	39.6			302	50.1		
Use any streaming media	No	677	92.4			492	82.7		
	Yes	56	7.6			103	17.3		
Use World Wide Web resources	No	268	35.7			102	16.9		
	Yes	482	64.3			501	83.1		
Use websites for any classes	No	540	72.6	9,637	63.2	277	45.8	484	48.2
	Yes	204	27.4	4123	36.8	328	54.2	358	51.8
Use email to communicate with students	No	132	17.6	5,296	41.3	68	11.2	245	32.6
	Yes	619	82.4	8,464	58.7	539	88.8	597	67.4
Accept student assignments that are submitted electronically	No	317	42.3			146	24.1		
	Yes	433	57.7			461	75.9		
Use websites to post information on homework assignments and readings	No	596	79.8	1,262	30.5	293	49.7	93	34.4
	Yes	151	20.2	2,861	69.5	296	50.3	265	65.6
Use websites to post exams or exam results	No	678	90.6	3,213	77.6	445	72.0	247	68.5
	Yes	70	9.4	910	22.4	173	28.0	111	31.5
Use websites to post general classroom information such as syllabus and office hours	No	557	74.5	756	19.5	299	48.1	56	23.7
	Yes	191	25.5	3,367	80.5	322	51.9	302	76.3
Use websites to provide links to other information	No	556	74.3	821	19.7	292	47.0	51	14.1
	Yes	192	25.7	3,302	80.3	329	53.0	307	85.9
Post practice exams or exercises on websites	No	694	93.2	3,213	77.6	437	70.9	247	68.5
	Yes	51	6.8	910	22.4	179	29.1	111	31.5

Note: Shaded areas indicate no available NSOPF:99 data

Use of Distance Education Technologies. Faculty use of distance education technologies is shown in Table 16, which displays information about the number of classes and the corresponding technology. The distance education technologies include: cable television, interactive television (e.g., Hawai‘i Interactive Television Services, “HITS”), online/web-based technology (e.g., WebCT, Blackboard), hybrid[11], or videoconferencing.

Table 16. Participants' Use of Distance Education Technologies by Number of Classes

	Total		UHCCs		Hilo		Mānoa		West O‘ahu	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1 to 2 classes	N=1,313		N=413		N=47		N=842		N=11	
Cable television	232	17.7	81	19.6	6	12.8	144	17.1	2	18.2
Interactive television	279	21.2	92	22.3	9	19.1	176	20.9	2	18.2
Online/Web-based	313	23.8	86	20.8	16	34.0	207	24.6	4	36.4
Videoconferencing	233	17.7	74	17.9	10	21.3	148	17.6	1	9.1
Hybrid	255	19.4	80	19.4	6	12.8	167	19.8	2	18.2
3 to 4 classes	N=256		N=87		N=16		N=148		N=5	
Cable television	21	8.2	11	12.6	0	0.0	10	6.8	0	0.0
Interactive television	59	23.0	18	20.7	7	43.8	33	22.3	1	20.0
Online/Web-based	75	29.3	26	29.9	2	12.5	45	30.4	2	40.0
Videoconferencing	34	13.3	9	10.3	2	12.5	23	15.5	0	0.0
Hybrid	67	26.2	23	26.4	5	31.3	37	25.0	2	40.0
5 to 6 classes	N=157		N=68		N=11		N=71		N=7	
Cable television	23	14.6	15	22.1	1	9.1	6	8.5	1	14.3
Interactive television	27	17.2	10	14.7	4	36.4	11	15.5	2	28.6
Online/Web-based	42	26.8	17	25.0	0	0.0	22	31.0	3	42.9
Videoconferencing	27	17.2	12	17.6	2	18.2	13	18.3	0	0.0
Hybrid	38	24.2	14	20.6	4	36.4	19	26.8	1	14.3
7 to 8 classes	N=65		N=33		N=6		N=24		N=2	
Cable television	9	13.8	6	18.2	1	16.7	1	4.2	1	50.0
Interactive television	19	29.2	11	33.3	1	16.7	7	29.2	0	.0
Online/Web-based	12	18.5	6	18.2	4	66.7	2	8.3	0	.0
Videoconferencing	13	20.0	3	9.1	0	.0	10	41.7	0	.0
Hybrid	12	18.5	7	21.2	0	.0	4	16.7	1	50.0
9 to 10 classes	N=37		N=16		N=16		N=15		N=0	
Cable television	6	16.2	3	18.8	1	16.7	2	13.3	0	.0
Interactive television	7	18.9	1	6.3	4	66.7	2	13.3	0	.0
Online/Web-based	9	24.3	2	12.5	1	16.7	6	40.0	0	.0
Videoconferencing	2	5.4	1	6.3	0	.0	1	6.7	0	.0
Hybrid	13	35.1	9	56.3	0	.0	4	26.7	0	.0
11+ classes	N=269		N=99		N=17		N=152		N=1	
Cable television	37	13.8	13	13.1	2	11.8	22	14.5	0	.0
Interactive television	41	15.2	15	15.2	4	23.5	22	14.5	0	.0
Online/Web-based	77	28.6	36	36.4	2	11.8	39	25.7	0	.0
Videoconferencing	43	16.0	9	9.1	3	17.6	30	19.7	1	100.0
Hybrid	71	26.4	26	26.3	6	35.3	39	25.7	0	.0

The majority of faculty members report that their distance education teaching experience[12] is limited to delivering either one or two courses using one of the five modalities. Fewer faculty report teaching three or four classes with even less reporting teaching five or more classes.

[11] The hybrid method combines face-to-face instruction with another distance education technology such as cable or interactive television, online/web delivery, or videoconferencing.

[12] These include prior experiences leading up to and including the fall 2003 semester.

Across the campuses, online/web-based technology leads (24 percent), interactive television (21 percent), hybrid (19 percent). Cable television and video-conferencing were found to be the same (18 percent each). The frequencies for these five technologies appear to peak at a reported total of 1,313 faculty who teach 1 to 2 classes. There is a dramatic downturn to 256 who teach 3 to 4 classes. This downward slide continues before reversing upwards at the 11-or-more-classes category. Within this group, the majority of these courses are found primarily between UH Mānoa (47 percent) and the UHCCs (44 percent). The data may suggest that faculty are only willing and able to develop one to two distance education courses while meeting other professional responsibilities, and that their undertaking of additional courses may be indicative of class size, course content or purpose.

Following online/web-delivery, the most frequently used technology is interactive television and hybrid delivery. Use of interactive television across the campuses ranges from 21 percent (1 to 2 classes), 23 percent (3 to 4 classes), 17 percent (5 to 6 classes), 30 percent (7 to 8 classes), 19 percent (9 to 10 classes), and 4 percent (11 or more classes).

Hybrid delivery, like interactive television, appears to be a similarly favored medium. Overall percentages for frequency of use includes: 19 percent (1 to 2 classes), 26 percent (3 to 4 classes), 24 percent (5 to 6 classes), 18 percent (7 to 8 classes), 35 percent (9 to 10 classes), and 26 percent (11 or more classes).

Cable television, despite being considered an "older" technology, is still used and on par with videoconferencing at 18 percent, for instructional delivery of 1 to 2 courses. However, use of cable television peaks for 1 to 2 classes and subsequently exhibits a dramatic decrease.

Who Uses Distance Education Technologies. Figures 9 displays information as to the percentage of participants by rank and campus who taught courses using distance education technologies (cable television, interactive television, online/web, videoconferencing, and hybrid format). Among the UHCCs, instructors (29 percent) and lecturers (21 percent) comprised the majority followed by professors and assistant professors (16 percent), and associate professors (15 percent). At UH Hilo and UH West Oahu, professors (26 percent, 50 percent) along with lecturers (26 percent, 17 percent) are the two key groups. In contrast, the professorial ranks at UH Manoa comprise the largest groups beginning with professors (26 percent), associate professors (19 percent), and assistant professors (17 percent).

Figure 9. Respondents Who Used Distance Education Technologies by Rank and Campus Unit

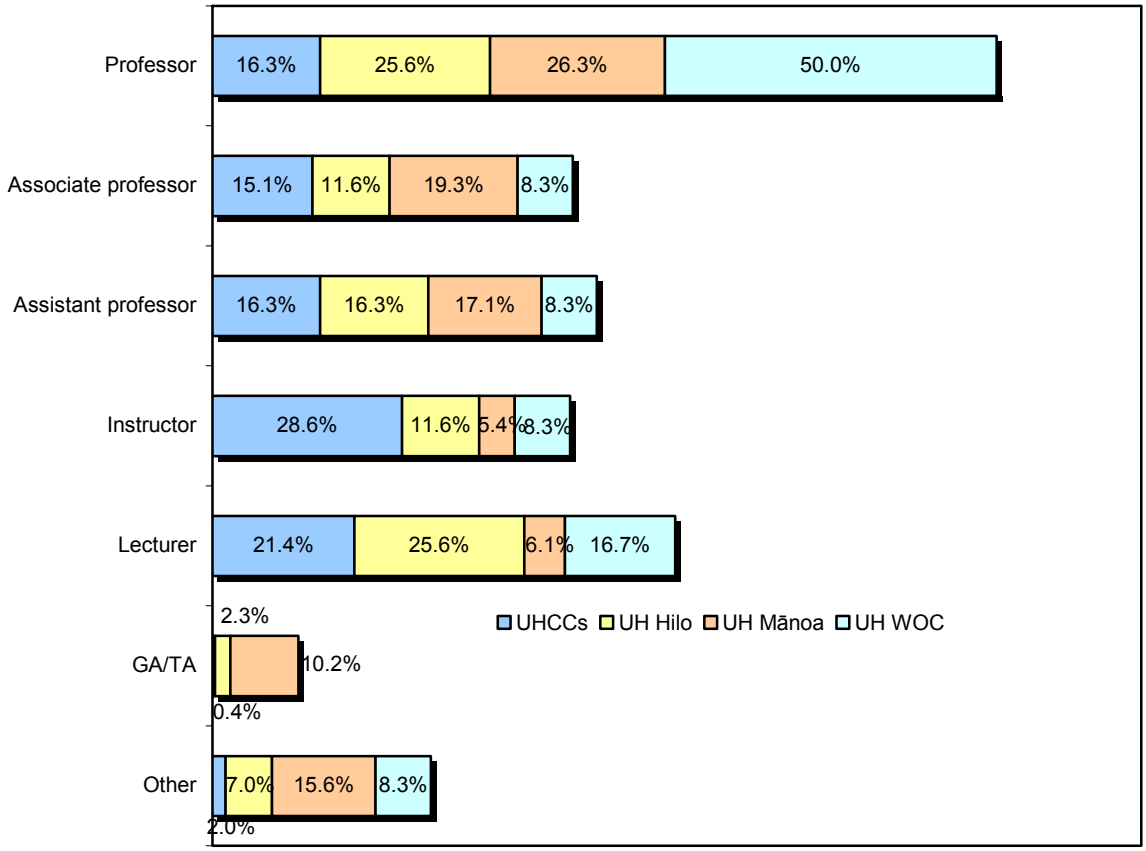
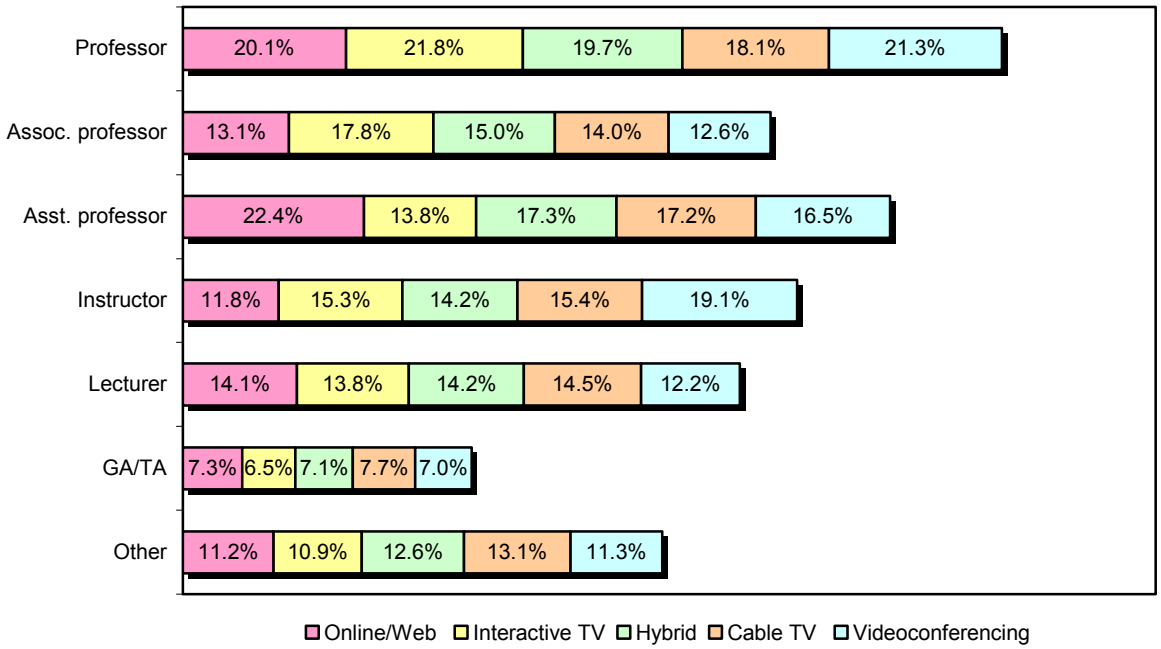


Figure 10 shows the percentage of participants by rank and use of distance education technologies beginning with the cluster of 1 to 2 classes which exhibited the largest and most frequent use of all five distance education technologies. Within this group of courses, professors were found to be the majority group for using four of the five distance education technologies: interactive television (22 percent), videoconferencing (21 percent), hybrid format (20 percent), and cable television (18 percent). In using online/web technology, associate professors (23 percent) eclipsed professors (20 percent) as the majority group by 3 percent.

Figure 10. Participants by Rank and Use of Distance Education Technologies Within 1 to 2 Classes Category



Associate professors were found to use interactive TV at a higher rate (18 percent) than assistant professors (14 percent; however, the assistant professors used online/web at a higher rate than associate professors (23 percent and 13 percent respectively), hybrid format (17 percent and 15 percent), cable television (17 percent and 14 percent), and videoconferencing (17 percent and 13 percent). More instructors were found to use videoconferencing than lecturers (19 percent and 12 percent); the same was true for interactive television (15 percent vs. 14 percent) but instructors were lower for online/web (12 percent and 14 percent) and were the same for hybrid format (14 percent) and cable television (15 percent). Graduate/teaching assistants were the lowest among the ranks in distance education technology use with 7 to 8 percent use for the five distance education technologies. Respondents comprising the "other" category showed percentages that were higher than those for the graduate/teaching assistants but lower than the lecturers for the five distance education technologies.

In addition to identifying the type of distance education technologies used by participants, information was also obtained to identify the year when the technology was first used. Table 17 displays information concerning when participants began using any of the five distance educational technologies: cable television, interactive television, online/web-based, video-conferencing, or hybrid delivery.

Table 17. Year Began Using Distance Education Technologies

Campus	Distance Educational Technologies				
	Cable Television	Interactive Television	Online/ Web-based	Video-conferencing	Hybrid
UHCCs	1995	1996	2000	1999	1999
Hawai‘i	2002	1997	2001	2001	2001
Honolulu	1995	1989	1998	1998	1997
Kapi‘olani	1997	1997	2001	2001	2000
Kaua‘i	1985	1995	1999	1995	1997
Leeward	1997	1996	2000	1999	2000
Maui	1992	1995	2001	2001	2000
Windward	1997	1998	2001	1997	2000
ETC	--	--	--	2000	--
Hilo	1997	1997	2000	1999	1998
Mānoa	1992	1995	2000	1999	1999
West O‘ahu	1998	1997	2000	2000	1999
OVERALL	1995	1996	2000	1999	1999

Overall, cable television is identified as the first technology used (1995) followed by interactive television (1996). Most recently-used technology is online/web-based (2000) followed by hybrid technologies and videoconferencing (1999).

Research Questions

An ordinal regression analysis was applied to the data to provide explanatory information about the respondents through identifying underlying relationships while controlling for particular variables. A total of 19 explanatory variables representing the key dimensions of the model were found to be significantly associated with participation in distance education. These results are used to answer the following research questions.

Q1: How do respondents who participate in distance education differ from those who do not in their use, attitude, and adoption of technology?

After controlling for all of the variables in the model, the ordinal regression results identified 11 factors from the key dimensions that were significantly associated with increasing the likelihood of participation in distance education relative to non-participation.

Respondents are more likely to participate in distance education:

- The more they agree that their technology skills are adequate ($p<.1$).
- The more they agree that technology is important in conducting their professional work ($p<.1$).
- The more they agree that their self-image is enhanced by using technological innovations. ($p<.1$).
- The more they agree that they have the skills needed to teach distance education ($p<.001$).
- The more they agree that the quality of distance education instruction and learning is as good as face-to-face instruction ($p<.001$).
- The more they agree that distance education is compatible with their work style ($p<.1$).
- The more they agree that distance education is easy to do ($p<.5$).
- The more that they agree that they are able to see the results of using distance education. ($p<.1$).
- The more that they agree that they have opportunities to first try-out distance education. ($p<.1$).
- The more importance they assign to using software in their professional work ($p<.1$).
- The more importance they assign to using e-resources in their professional work ($p<.01$).

Q2: What characteristics (e.g., demographics) differentiate those who participate in distance education and those who do not?

After controlling for all variables within the model, the ordinal regression results identified three demographic characteristics that were significantly associated with separating participants from non-participants in distance education: ethnicity[13], age, and institutional place of employment[14]. The variables and their effect on participation in distance education are described as follows:

[13] The 11-categories associated with the ethnicity variable were collapsed into two categories (minority, non-minority) to improve significance values. Minority includes African-American, Chinese, Filipino, Hawaiian, Hispanic, East Indian, Japanese, Korean, Native-American, Pacific Islander, and Mixed/Other. Non-minority references Caucasian.

[14] The 11-categories associated with the campus variable were collapsed into 3 categories based on the Carnegie classification (Associates Colleges, Baccalaureate Colleges, and Doctoral Research Extensive University) to improve significance values.

- *Minority*. Respondents who were in the minority category were found to be less likely than those in the non-minority category to participate in distance education by 18 percent. ($p<.1$).
- *Age*. The demographic variable of "age" was found to have a small effect; that is, for each additional year in respondents' age, participation in distance education increased by 1 percent ($p<.001$).
- *Institutional Type*. Respondents from the Associates and Baccalaureate Colleges were found to be less likely to participate in distance education by 20 and 30 percent, respectively, than those at the Doctoral-Research Extensive University ($p<.1$).[15]

Q3: What are the barriers to participation most likely to be identified by faculty?
After controlling for all of the variables in the model, the ordinal regression results identified five factors from three of the key dimensions that were significantly associated with non-participation in distance education relative to participation. The results indicate that respondents who are less likely to participate present a pattern of counterintuitive beliefs that seemingly support participation in distance education:

Respondents are less likely to participate in distance education:

- The more they agree that resources are available to support their technology needs ($p<.01$).
- The more they agree that the institution values distance education ($p<.1$).
- The more they agree that distance education is voluntary ($p<.001$).
- The more they agree that they can share their experiences in using distance educational technologies with others ($p<.5$).
- The more they agree that the advantages of distance education outweigh the disadvantages ($p<.5$).

Faculty respondents who do not participate in distance education believe that resources are available and that the institution values distance education—they simply do not choose to participate. Efforts to make more training available or to reinforce the importance of distance delivery seem unlikely to change their behavior. Furthermore, they agree that the advantages outweigh the disadvantages suggesting that these respondents do not have a negative view of distance education; rather, participation may not be of interest or may not be in keeping with their approach to teaching or interaction with students.

Although respondents' beliefs may appear counterintuitive, resolution of these conflicting views form a pragmatic basis for policy development and discussion.

Policy Implications for The University of Hawai'i and Higher Education
Based on a comprehensive review of the policies and practices at UH and the findings of this study, there are a number of core issues underlying faculty participation and non-participation in distance education which include: technology use and skills, training and development, course design and technical support, copyright and intellectual property, perceived quality of distance

[15] Among institutional types, participants were more likely to be at UH Manoa although UHM has a relatively lower percentage of participating faculty than most campuses.

education, faculty workload and compensation, and institutional and organizational administration.

Many of these issues intertwine and overlap, presenting further complexity and challenges for university administrators and decision makers in developing effective policies. While a few of these issues are broadly articulated in the UH Distance and Distributed Learning Action Plan (University of Hawai'i, 2003), and the 2002-2010 strategic plan for the UH System (University of Hawai'i Board of Regents 2001-2002 & Office of the President, 2002), several issues remain to be addressed. The interconnectedness of these core issues underscores the challenges in developing policies that will address each issue while facilitating a broader acceptance and understanding of distance education that is compatible with institutional culture and values.

Re-thinking Training and Development. Several findings indicate that faculty members who are more likely to participate in distance education view technology and their skill in using technology as important in conducting their work. Moreover, it was also found that faculty who are able to experience using technology by testing it and seeing how easy or difficult it is to use, and viewing it as compatible with their current work practices, are also more likely to participate in distance education.

The link between faculty proficiency, regard for technology, and increasing the likelihood of participating in distance education emphasizes the need for providing faculty with opportunities for training and development. Indeed, the literature often cites the need for institutional support in providing technology training and development as a means for influencing faculty to participate in distance education (Arnone, 2002; Betts, 1998; Bower, 2001; Dooley & Murphrey, 2000; Hayes & Jamrozik, 2001; Wilson, 2001). However, interestingly, another finding in this study indicates that faculty who are *less likely* to participate in distance education perceive greater availability of institutional resources to support technology needs. This finding suggests that training and development are not the issues preventing these faculty from participating. In fact, the University has delivered on the recommendations in the UH Distance and Distributed Learning Action Plan and the action strategy from the UH strategic plan in providing training, support, online and user support groups, and an annual colloquium/conference as noted below; however, such training and development is not necessarily likely to secure the participation of non-participants.

UH Distance and Distributed Learning Action Plan (University of Hawai'i, 2003, pp. 5-6):

> FAC2. Faculty & Staff Development and Support. Faculty and staff must have access to training to help them get started using technology, and ongoing support to ensure continuing development and success. Support strategies must be beyond workshops to include coaching, mentoring and more individualized just in time approaches.
>
> FAC3. Distributed Learning Colloquia. Establish an annual system-wide distributed learning colloquium/conference as well as regular events throughout the year that bring together the UH distance distributed learning community. Topics should include pedagogy, costs, program planning, learning resources, library support, student services, new technology approaches, etc. that will appear to faculty, administrators, librarians, student services professionals, and technologies.

> FAC4. Online Support for our Distributed Learning Community. Establish online communities for those involved in distributed learning with discussions, mailing lists, online resources. This should include a system-wide database of and for the distributed learning community that shares what individual faculty are doing and which staff and administrators can help. (This can build on the existing Faculty Interest Groups, the "FIGs," developed among the community colleges.)

UH Strategic Plan (University of Hawai'i Board of Regents 2001-2002 & Office of the President, 2002, pg. 13):

> Goal 2, Objective 3. Engage, develop, and support the University's entire faculty and staff to create a pervasive technology-rich instructional environment that serves on-campus and off-campus learners through intercampus sharing of experiences, application showcases, and collaborative development activities that demonstrate how technology can improve student-learning outcomes across the curriculum.

Further research is needed to identify the particular variables that explain how faculty members acquire their technology skills, particularly for those who are more likely to participate in distance education. However, in the absence of such data it may be that instead of formal workshops and seminars offered by the institution, faculty may receive (and may prefer to receive) informal help and assistance from colleagues within their own department, discipline, or college.[16] The proximity of a knowledgeable colleague may be more convenient, enticing, and conducive toward increasing one's knowledge and skills in using technology. Such informal interactions between colleagues also supports other findings in the study which account for increased participation in distance education: whether a technological innovation is compatible with current work practices, the ease in using it, the ability to try it out, and the ability to see its results. In addition to substituting collegial interactions for institutional workshops and seminars, another possibility might be that faculty who participate in distance education may have acquired their knowledge and skills through self-learning or other means that are entirely independent and external to the institution.

In the event faculty members are found to receive training and development through informal means such as peer support and self-learning, funding could be directed toward reinforcing this process (e.g., "train the trainer" efforts that reach into departments to support continued and ongoing work).

Course Design and Technical Support. The findings of this study indicate that faculty who are more likely to participate in distance education also exhibit stronger agreement as to their distance education instructional skills. However, acquiring these skills call for addressing distinctions inherent in the distance education medium. Foremost is having faculty adjust their course materials and instructional delivery within the parameters established by the medium; however, faculty with limited or no prior experience may be unable or unwilling to do so without help or support. To assist faculty in making this transition, instructional designers and technical

[16] Such events have been substantiated by faculty during the discussion sessions with several describing incidents in helping colleagues learn new skills or resolve technological problems.

support personnel should be available to facilitate the course design and to provide technical assistance. Such assistance should not circumvent nor impede faculty in their delivery of instruction or course content.

In addition to addressing inherent characteristics of the distance education medium, further distinctions may also arise from departmental or campus-based culture. Such culture may informally establish subtle or overt expectations which promote or inhibit technology use. For example, if the norms of a department (or of certain faculty members within the department) establish a high level of sophistication and elaboration in on-line delivery, the high bar may encourage (or discourage) the novice to participate. Conversely, if departmental norms emphasize "chalk and talk" non-technological means of instructional delivery, the residing faculty may not feel compelled to participate in distance education. Understanding how these expectations form and become established may provide further insight as to ways to encourage technology use and participation in distance education.

Intellectual Property and Copyright. To support faculty in developing or transforming course materials for distance delivery, the institution must also establish and disseminate clear guidelines as to ownership and copyright protection of the course materials. In developing materials for distance education courses, clear policy guidelines should be established to identify ownership of the materials. Ownership should include the circumstances under which the course materials will be held by the faculty member, the institution, or jointly, and how it may determine royalty payments (as applicable). Further clarification or stipulations may also be given as to governing use of the materials including time limitations (as appropriate to the subject matter).

The specificity of the intellectual property and copyright issues would certainly expand the FAC5 clause of the UH Distance and Distributed Learning Action Plan which addresses copyright support by establishing a service "that helps faculty understand the legal use of copyrighted materials in a distributed learning environment and provides copyright clearance assistance when appropriate" (University of Hawai'i, 2003, p. 6). Intellectual property is also identified in the UH strategic plan as one of the issues requiring resolution as it "create barriers to faculty participation in distance and technology-enhanced learning" (University of Hawai'i Board of Regents 2001-2002 & Office of the President, 2002, pg. 18).

Quality. When it comes to assessing quality of distance education (e.g., instruction, learning, student interaction, students and their work), faculty respondents who participate in distance education consistently held more positive views than non-participating faculty. While it is unclear as to how non-participating faculty are forming their opinions, the results suggest that experience might be the most persuasive tool in encouraging participation in distance education.

The perceived quality of distance education courses may be bolstered by having broader participation from the faculty at all ranks. Among participants who indicated participating in distance education, participants who were on the tenure track but not tenured were the smallest represented group (16 percent). This suggests that junior faculty may be engaged in contract renewal and tenure-related activities which preclude them from participating in distance education. Junior faculty may view or be advised that distance education detracts from time

spent on tenure-related activities; however, junior faculty members represent new and current knowledge which would contribute toward enhancing and elevating the quality of distance education content and instruction.

In addition to junior faculty, senior faculty members are also an important component in sustaining quality in distance education. Senior faculty represent a wealth of scholarly knowledge and instructional experience, and encouraging greater numbers of faculty to participate in distance education will help to enhance the quality of online instruction and learning.

Expectation of Participation. This study found that those respondents' who are less likely to participate in distance education are more likely to believe that the institution values distance education. While this may be an indication of underlying tension between faculty and administrators or even the autonomous nature of faculty, expectations for participation in distance education must be clear. Departments and colleges committed to the delivery of instruction by distance must create an expectation of participation by specifying in job descriptions the nature and level of involvement expected in distance delivery. Furthermore, such expectations should be incorporated into tenure and promotion requirements. Clarification would help encourage participation by junior faculty by alleviating the pressure and perceived risk associated with the contract renewal and tenure process.

To help faculty meet the expectations for teaching distance education courses, it is also important to find the right distance education technology from the five modalities that is best suited to fit individual work styles and preferences. This would help faculty gain greater confidence in their technology-skills and help to encourage and sustain their participation in distance education.

Workload and Compensation. It is generally acknowledged that teaching distance education courses, particularly those that are online/web-based, requires more time than traditional face-to-face courses. The results in this study substantiated this perception as 59 percent of participants and 41 percent of non-participants strongly agreed. The amount of time and work involved in developing course materials, delivering instruction, facilitating discussion and communicating with students, and managing technical challenges presented by the medium, exceeds the normal class and office hours associated with traditional classes and is a disincentive for participating.

Compensating faculty for the amount of time and work required for developing distance education courses is fairly common; compensation for their delivery is not common practice, probably due to issues of equity. Faculty are not reimbursed differentially for teaching a section with 14 students relative to one with 28 students, or lectures as compared to seminars, or any of the various teaching modes independent of technology or distance. Creating differential reward structures for distance instruction deserves thoughtful consideration to determine whether the potential benefit of increased participation would outweigh the potential cost of perceived inequities.

If differential compensation is considered, such plans may take into account the types and amounts of preparation for each of the modalities, (e.g., online vs. ITV, cable, hybrid) and may occur in various forms. For example, compensation could take the form of: graduate or teaching

assistants, stipends, course releases, overload pay or additional payment above the base pay according to the number of remote sites. Compensation could also include costs associated with use of home equipment, software, equipment upgrades, and Internet service costs. The issues of workload and incentives "for participation in entrepreneurial programs" and recognition in tenure and promotion processes are included in the UH strategic plan as matters that "create barriers to faculty participation in distance and technology-enhanced learning" and need resolution (University of Hawai'i Board of Regents 2001-2002 & Office of the President, 2002, pg. 18). Revising the language of this policy to provide greater specificity of the issues and conditions associated with workload, compensation, and incentives would help clarify the policy and strengthen its application and enforceability.

Key Recommendation for the University of Hawai'i System

In addition to the policy recommendations presented in the previous section, there is one key recommendation that is critical to understanding the scope and depth of faculty participation in distance education: data collection. There is a vital need to have data about participation in distance education collected in a centralized database such as *Banner* which is the current student course registration system used by the University of Hawai'i. This would allow information to be collected in a timely, accurate, and ongoing manner that would permit deeper analysis. Such information would include: the level and type of courses taught, the mode of distance educational technologies used, faculty (discipline, department, college) who teach the courses, as well as other elements that would provide a better sense of participation in distance education and also allow for examining trends over time.

Conclusion

The success of distance learning is achieved not only from well-conceived programs, well-prepared students, and a solid technology infrastructure and support system, but it also relies upon engaging and developing qualified faculty to participate in delivering instruction through this medium. Much of the success or failure of distance education rests upon how faculty members perceive technology and the degree to which they assimilate and apply the related technologies. While faculty engage in using selective technologies, the findings of this study indicate that their participation or non-participation in distance education results from factors associated with their skill in the use of technology, their attitude toward technology and distance education, their ability to adopt an innovation, and the demographic variables of age, ethnicity, and institutional affiliation.

Developing distance education policies that meet faculty and institutional needs clearly presents numerous challenges for institutional planning and decision-making processes. Foremost is developing policies that will increase faculty participation in distance education that call for integrated system-wide planning across colleges, departments, and disciplines. Such efforts should be directed toward developing long-range strategic planning that makes distance education instruction an expected component of faculty workload as appropriate to campus and departmental mission, provides increased access and funding for technology needs, develops on-site support units that are housed within colleges and disciplines, addresses copyright and intellectual property issues, and provides fair and equitable compensation.

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APPENDICES

Appendix A. Gender and Race/Ethnicity of Respondents by Campus Units

Demographics	Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West O‘ahu (%)
Gender	N=1,917	N=614	N=105	N=1,178	N=20
Female	933 (48.7)	335 (54.6)	54 (51.4)	537 (45.6)	7 (35.0)
Male	984 (51.3)	279 (45.4)	51 (48.6)	641 (54.4)	13 (65.0)
Race/Ethnicity	N=1,892	N=616	N=99	N=1,157	N=20
African-American	10 (.5)	3 (.5)	0 (.0)	7 (.6)	0 (.0)
Caucasian	1,064 (56.2)	297 (48.2)	74 (74.7)	681 (58.9)	12 (60.0)
Chinese	128 (6.8)	34 (5.5)	3 (3.0)	90 (7.8)	1 (5.0)
East Indian	13 (.7)	3 (.5)	0 (.0)	10 (.9)	0 (.0)
Filipino	49 (2.6)	27 (4.4)	0 (.0)	22 (1.9)	0 (.0)
Hawaiian/Part Hawaiian	74 (3.9)	33 (5.4)	7 (7.1)	34 (2.9)	0 (.0)
Hispanic	24 (1.3)	4 (.6)	1 (1.0)	19 (1.6)	0 (.0)
Japanese	311 (16.4)	143 (23.2)	8 (8.1)	157 (13.6)	3 (15.0)
Korean	35 (1.8)	10 (1.6)	1 (1.0)	24 (2.1)	0 (.0)
Native American	7 (.4)	4 (.6)	0 (.0)	3 (.3)	0 (.0)
Pacific Islander	9 (.5)	3 (.5)	0 (.0)	6 (.5)	0 (.0)
Mixed/Other	168 (8.9)	55 (8.9)	5 (5.1)	104 (9.0)	4 (20.0)
Minority/Non-minority*	N=1,892	N=616	N=99	N=1,157	N=20
Minority	828 (43.8)	319 (51.8)	25 (25.3)	476 (41.1)	8 (40.0)
Non-minority	1,064 (56.2)	297 (48.2)	74 (74.7)	681 (58.9)	12 (60.0)

* For the purpose of analysis, minority includes African-American, Chinese, Filipino, Hawaiian, Hispanic, East Indian, Japanese, Korean, Native-American, Pacific Islander, and Mixed/Other. Non-minority is Caucasian.

Appendix B. Classification, Rank, and Appointment of Respondents by Campus Units

Demographics	Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West Oʻahu (%)
Classification	N=1,815	N=578	N=98	N=1,119	N=20
Instructional	1,132 (64.2)	457 (79.1	71 (72.4)	589 (52.6)	15 (75.0)
Librarian	74 (4.1)	17 (2.9)	1 (1.0)	55 (4.9)	1 (5.0)
Department chair	45 (2.5)	11 (1.9)	5 (5.1)	29 (2.6)	0 (.0)
Researcher	152 (8.4)	7 (1.2)	1 (1.0)	143 (12.8)	1 (5.0)
Specialist	156 (8.6)	10 (1.7)	7 (7.1)	137 (12.2)	2 (10.0)
Agent	35 (1.9)	6 (1.0)	3 (3.1)	26 (2.3)	0 (.0)
Split Appointment	89 (4.9)	29 (5.0)	5 (5.1)	55 (4.9)	0 (.0)
Other	132 (7.3)	41 (7.1)	5 (5.1)	85 (7.6)	1 (5.0)
Rank	N=1,897	N=617	N=104	N=1,156	N=20
Assistant professor	309 (16.3)	107 (17.3)	13 (12.5)	188 (16.3)	1 (5.0)
Associate professor	280 (14.8)	97 (15.7)	15 (14.4)	165 (14.3)	3 (15.0)
Professor	429 (22.6)	103 (16.7)	26 (25.0)	293 (25.3)	7 (35.0)
Instructor	218 (11.5)	136 (22.0)	12 (11.5)	69 (6.0)	1 (5.0)
Lecturer	274 (14.4)	157 (25.4)	26 (25.0)	86 (7.4)	5 (25.0)
Graduate Asst/Teaching Asst	161 (8.5)	3 (.5)	2 (1.9)	156 (13.5)	0 (.0)
Level II	21 (1.1)	3 (.5)	1 (1.0)	16 (1.4)	1 (5.0)
Level III	21 (1.1)	1 (.2)	1 (1.0)	19 (1.6)	0 (.0)
Level IV	17 (.9)	1 (.2)	1 (1.0)	15 (1.3)	0 (.0)
Level V	29 (1.5)	2 (.3)	1 (1.0)	25 (2.2)	1 (5.0)
Junior position	64 (3.4)	5 (.8)	3 (2.9)	56 (4.8)	0 (.0)
Assistant position	57 (3.0)	1 (.2)	3 (2.9)	53 (4.6)	0 (.0)
Associate position	17 (.9)	1 (.2)	0 (.0)	15 (1.3)	1 (5.0)
Appointment	N=1,640	N=522	N=833	N=1021	N=14
9-month	910 (55.5)	359 (68.8)	55 (66.3)	486 (47.6)	10 (71.4)
11-month	730 (44.5)	163 (31.2)	28 (33.7)	535 (52.4)	4 (28.6)

Appendix C. Faculty Status, Tenure Status, Level of Instruction by Campus Units

Demographics	Overall (%)	UHCCs (%)	Hilo (%)	Mānoa (%)	West Oʻahu (%)
Employment Status	N=1,925	N=625	N=105	N=1,175	N=20
Part-time	468 (24.3)	153 (24.5)	25 (23.8)	285 (24.3)	5 (25.0)
Full-time	1,457 (75.7)	472 (75.5)	80 (76.2)	890 (75.7)	15 (75.0)
Faculty Status (F'03)	N=1,916	N=621	N=103	N=1,172	N=20
Yes	1,633 (85.2)	517 (83.3)	91 (88.3)	1,008 (86.0)	17 (85.0)
No	283 (14.8)	104 (16.7)	12 (11.7)	164 (14.0)	3 (15.0)
Tenure Status	N=1,918	N=626	N=105	N=1,168	N=19
Tenured	792 (41.3)	288 (46.0)	46 (43.8)	448 (38.4)	10 (52.6)
On tenure track but no tenure	258 (13.5)	77 (12.3)	13 (12.4)	165 (14.1)	3 (15.8)
Not on tenure track	868 (45.3)	261 (41.7)	46 (43.8)	555 (47.5)	6 (31.6)
Level of Instruction	N=1,917	N=626	N=103	N=1,168	N=20
None	261 (13.6)	70 (11.2)	7 (6.8)	181 (15.5)	3 (15.0)
Undergraduate only	936 (48.8)	531 (84.8)	86 (83.5)	302 (25.9)	17 (85.0)
Both undergraduate and graduate	513 (26.8)	19 (3.0)	9 (8.7)	485 (41.5)	0 (.0)
Graduate only	207 (10.8)	6 (1.0)	1 (1.0)	200 (17.1)	0 (.0)
Highest Degree Obtained	N=1,938	N=624	N=106	N=1,188	N=20
Doctorate	808 (41.7)	88 (14.1)	66 (62.3)	461 (54.0)	13 (65.0)
First professional (e.g., MD, JD)	118 (6.1)	12 (1.9)	1 (.9)	105 (8.8)	0 (.0)
Master's	786 (40.6)	416 (66.7)	32 (30.2)	331 (27.9)	7 (35.0)
Bachelor's	192 (9.9)	76 (12.2)	7 (6.6)	109 (9.2)	0 (.0)
Associate's	20 (1.0)	19 (3.0)	0 (.0)	1 (.1)	0 (.0)
Less than Associate's	14 (.7)	13 (2.1)	0 (.0)	1 (.1)	0 (.0)

Appendix D. Allocation of Average Percentage of Time Spent on Activities

Activity	UHCCs % Time Spent	Hilo % Time Spent	Mānoa % Time Spent	West Oʻahu % Time Spent
a. **Teaching Undergraduate Students** (including teaching; grading papers; preparing courses; developing new curricula; advising or supervising students; supervising student teachers and interns; working with student organizations or intramural athletics)	66.3%	59.8%	27.3%	59.0%
b. **Teaching Graduate or First Professional Students** (including teaching; grading papers; preparing courses; developing new curricula; advising or supervising students; supervising student leaders and interns; supervising clinical students; working with student organizations or intramural athletics)	--	2.0%	14.3%	--
c. **Research/Scholarship** (including research, reviewing or preparing articles or books, attending or preparing for professional meetings or conferences; reviewing proposals; seeking outside funding; giving performances or exhibitions in the finer applied arts; or giving speeches)	5.4%	10.9%	24.1%	8.9%
d**. Professional Growth** (including taking courses; pursuing an advanced degree; other professional development activities; such as practice or activities or remain current in your field)	5.7%	2.6%	7.3%	3.0%
e. **Administration** (including departmental or institution-wide meetings or committee work)	10.8%	9.8%	13.2%	17.7%
f. **Service** (including providing legal or medical services or psychological counseling to clients or patients; paid or unpaid community or public service; service to professional societies/associations)	6.0%	8.1%	10.1%	7.7%
g. **Outside Consulting, Freelance Work, Other Outside Work/Other Non-Teaching Professional Activities** (other activities or work not listed in a-f)	5.9%	6.7%	3.8%	3.7%

Note: Results include responses from full- and part-time faculty and staff having instructional duties for the fall 2003 semester. Percentages are based on responses that accounted for time allocations that totaled to 100 percent.

Appendix E. Demographic Characteristics of Non-participants and Participants in Distance Education

Demographic Characteristic	Non-participants in Distance Education				Participants in Distance Education			
	U of Hawai'i		NSOPF:99		U of Hawai'i		NSOPF:99	
	Freq	%	Freq	%	Freq	%	Freq	%
Gender	N=1,079		N=13,760		N=752		N = 842	
Male	572	53.0	7.709	59.1	381	50.7	427	52.4
Female	507	47.0	6,051	40.9	371	49.3	415	47.6
Race/Ethnicity	N=1,072		N=13,760		N=785		N=842	
African-American	3	.3	985	4.9	6	.8	40	3.3
American Indian/Alaskan Native	6	.6	59	.5	2	.3	4	1.0
Asian/Pacific Islander	361	33.7	766	4.1	232	29.6	44	5.9
Caucasian	583	54.4	11,009	86.1	483	61.5	706	85.8
Hispanic	11	1.0	788	3.5	10	1.3	37	3.1
More than one ethnicity	108	10.1	153	.9	52	6.6	11	1.0
Age	N=1,062		N=13,760		N=739		N=842	
Under 35	162	15.3	1,261	9.9	86	11.6	62	8.3
35 to 44	194	18.3	3,462	25.2	140	18.9	211	23.6
45 to 54	291	27.4	4,934	35.0	254	34.4	323	39.5
55 to 64	318	29.9	3,245	22.8	214	29.0	202	22.1
65 to 69	65	6.1	574	4.7	29	3.9	28	3.1
70+	32	3.0	284	2.4	16	2.2	16	3.3
Faculty Status	N=1,074		N=13,760		N=756		N=842	
Yes	891	83.0	12,828	91.3	666	88.1	790	93.2
No	183	17.0	932	8.7	90	11.9	52	6.8
Employment Status	N=1,081		N=13,760		N=761		N=842	
Full-time	793	73.4	9,603	56.8	596	78.3	620	58.0
Part-time	288	26.6	4,157	43.2	165	21.7	222	42.0
Academic Rank	N=1,078		N=13,760		N=736		N=842	
Full professor	239	22.2	3,028	20.4	166	22.6	189	22.3
Associate professor	147	13.6	2,480	15.5	123	16.7	139	12.8
Assistant professor	169	15.7	2,462	14.7	122	16.6	142	15.4
Instructor	107	9.9	3,407	29.5	104	14.1	235	30.7
Lecturer	171	15.9	740	6.6	103	14.0	24	4.7
Other	245	22.7	1,643	13.3	118	16.0	113	14.1
Tenure Status	N=1,078		N=13,760		N=757		N=842	
Tenured	424	39.3	5,225	38.0	323	42.7	339	40.3
Tenure-track but no tenured	130	12.1	2,097	15.2	119	15.7	96	11.4
Not on tenure track	524	48.6	6,438	46.8	315	41.6	407	48.3
Highest Degree	N=1,093		N=13,760		N=760		N=842	
Doctor's	424	38.8	6,472	41.7	343	45.1	351	34.1
First professional	70	6.4	921	7.1	41	5.4	55	8.9
Master's	451	41.3	5,059	40.0	303	39.9	355	48.1
Bachelor's	124	11.3	992	8.5	64	8.4	59	6.8
Associate's	13	1.2	164	1.5	5	.7	7	.8
Less than associate's	11	1.0	152	1.3	4	.5	15	1.4

Appendix F. Level of Instruction, Campus Location, and Locus of Appointment of UH Participants and Non-participants in Distance Education

	Totals		Participants		Non-participants	
	Freq	%	Freq	%	Freq	%
Term of Appointment	N=1,570		N=667		N=903	
9-month contract	863	55.0	383	57.4	480	53.2
11-month contract	707	45.0	284	24.6	423	46.8
Level of Instruction	N=1,830		N=755		N=1,075	
None	242	13.2	70	9.3	172	16.0
Undergraduate only	906	49.5	386	51.1	520	48.4
Both undergraduate and graduate	480	26.2	222	29.4	258	24.0
Graduate only	202	11.0	77	10.2	125	11.6
Campus	N=1,810		N=746		N=1,064	
UHCCs	580	32.0	260	34.9	320	30.1
Hawai‘i	84	4.6	30	4.0	54	5.1
Honolulu	88	4.9	27	3.6	61	5.7
Kapi‘olani	145	8.0	68	9.1	77	7.2
Kaua‘i	48	2.7	21	2.8	27	2.5
Leeward	105	5.8	52	7.0	53	5.0
Maui	67	3.7	45	6.0	22	2.1
Windward	36	2.0	15	2.0	21	2.0
ETC	7	.4	2	.3	5	.5
Hilo	99	5.5	43	5.8	56	5.3
Mānoa	1,112	61.4	431	57.8	681	64.0
West O‘ahu	19	1.0	12	1.6	7	.7
Locus of Appointment	N=1,701		N=699		N=1,002	
Arts and Sciences	743	43.7	291	41.6	452	45.1
Professional Schools	470	27.6	210	30.0	260	25.9
Organized Research	114	6.7	34	4.9	80	8.0
Service and Support	255	15.0	96	13.7	159	15.9
Other	50	2.9	21	3.0	29	2.9
Split Appointments	69	4.1	47	6.7	22	2.2

Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Use of Software Applications														
Wordprocessing (e.g., Wordperfect, MS Word)	1,943	4.81 (.65)	4.91 (.40)	4.81 (.64)	4.90 (.45)	4.77 (.71)	4.70 (.79)	4.77 (.74)	4.86 (.51)	4.80 (.63)	4.79 (.67)	4.84 (.59)	4.44 (1.18)	4.50 (1.07)
Presentation software (e.g., Powerpoint)	1,890	3.58 (1.41)	3.10 (1.47)	3.77 (1.38)	4.05 (1.43)	3.30 (1.40)	3.21 (1.43)	3.17 (1.51)	3.31 (1.34)	3.17 (1.48)	3.42 (1.35)	3.56 (1.36)	3.22 (1.42)	2.88 (1.13)
Databases (e.g., Access)	1,804	2.96 (1.45)	2.65 (1.43)	3.03 (1.45)	3.37 (1.64)	2.88 (1.43)	2.64 (1.43)	2.69 (1.37)	2.75 (1.37)	3.29 (1.55)	3.01 (1.45)	3.01 (1.51)	2.97 (1.42)	3.38 (1.19)
Spreadsheets (e.g., Excel, Quatro Pro)	1,862	3.52 (1.43)	3.38 (1.48)	3.60 (1.41)	3.10 (1.52)	3.42 (1.44)	3.29 (1.44)	3.13 (1.53)	3.65 (1.35)	3.31 (1.46)	3.40 (1.46)	3.47 (1.47)	3.41 (1.36)	4.13 (.99)
Quantitative programs (e.g., SPSS, SAS)	1,482	2.34 (1.50)	2.18 (1.46)	2.64 (1.57)	2.33 (1.33)	1.64 (1.03)	1.75 (1.10)	1.54 (1.08)	1.62 (.95)	1.81 (1.06)	1.75 (1.08)	1.46 (.93)	1.62 (1.07)	1.17 (.41)
Qualitative programs (e.g., NVivo, NUD*IST)	1,303	1.63 (1.06)	1.32 (.73)	1.70 (1.10)	1.62 (.96)	1.54 (1.02)	1.59 (1.08)	1.37 (.93)	1.59 (1.03)	1.62 (.92)	1.58 (1.06)	1.55 (1.09)	1.52 (1.08)	1.17 (.41)
Graphics/photo editing programs (e.g., Photoshop, Fireworks)	1,760	2.95 (1.39)	2.58 (1.34)	3.04 (1.40)	2.65 (1.23)	2.85 (1.36)	2.75 (1.30)	2.79 (1.44)	2.76 (1.36)	2.72 (1.38)	2.96 (1.36)	3.14 (1.26)	3.13 (1.38)	2.13 (1.55)
Video editing (e.g., After Effects, MovieShop)	1,592	1.91 (1.20)	1.64 (1.13)	1.90 (1.19)	1.71 (1.16)	1.99 (1.22)	1.87 (.98)	1.75 (1.17)	2.03 (1.27)	1.86 (1.01)	2.29 (1.40)	2.04 (1.58)	2.04 (1.23)	1.43 (.79)
Mathematical modeling/analysis	1,482	1.96 (1.36)	1.72 (1.21)	2.13 (1.46)	1.29 (.69)	1.67 (1.09)	1.80 (1.18)	1.57 (1.06)	1.54 (.95)	1.76 (.94)	1.76 (1.24)	1.82 (1.30)	1.68 (1.07)	1.00 (.0)
Financial analysis/accounting/budgeting	1,554	1.93 (1.25)	1.72 (1.16)	1.87 (1.20)	2.06 (1.70)	2.09 (1.32)	2.13 (1.41)	1.78 (1.21)	2.15 (1.29)	2.16 (1.22)	2.17 (1.41)	2.29 (1.41)	1.82 (1.06)	2.50 (1.76)
Portable document files (e.g. Adobe Acrobat)	1,829	3.86 (1.29)	3.61 (1.33)	4.00 (1.24)	3.85 (1.42)	3.64 (1.37)	3.54 (1.42)	3.54 (1.40)	3.71 (1.33)	3.29 (1.53)	3.56 (1.40)	4.11 (1.03)	3.68 (1.42)	3.00 (1.77)
Drawing (e.g., AutoCad)	1,555	1.98 (1.28)	1.59 (.97)	2.04 (1.30)	1.47 (.87)	1.95 (1.28)	2.21 (1.45)	2.15 (1.46)	1.89 (1.24)	1.56 (.87)	1.83 (1.20)	1.80 (1.16)	2.22 (1.40)	1.50 (.84)
Scientific modeling/simulations	1,452	1.95 (1.37)	1.55 (.92)	2.12 (1.47)	1.31 (.70)	1.70 (1.19)	1.80 (1.22)	1.72 (1.27)	1.63 (1.12)	1.68 (1.18)	1.62 (1.11)	1.85 (1.30)	1.79 (1.35)	1.33 (.82)
Web authoring (e.g., Dreamweaver, Frontpage)	1,619	2.52 (1.46)	2.37 (1.49)	2.45 (1.43)	2.17 (1.65)	2.69 (1.49)	2.33 (1.27)	2.45 (1.61)	2.84 (1.52)	2.29 (1.33)	2.94 (1.54)	2.87 (1.43)	3.03 (1.52)	2.50 (1.31)
Videoconferencing/video cameras	1,597	2.22 (1.32)	1.97 (1.24)	2.20 (1.30)	2.47 (1.68)	2.28 (1.35)	2.49 (1.32)	1.80 (1.17)	2.09 (1.28)	2.20 (1.27)	2.47 (1.41)	3.05 (1.38)	1.83 (1.10)	2.00 (1.51)
Use of Hardware														
Computer (e.g., PC, Mac, Tablet PCs)	1,929	4.88 (.51)	4.94 (.27)	4.90 (.47)	4.95 (.22)	4.84 (.61)	4.84 (.57)	4.87 (.59)	4.89 (.52)	4.83 (.58)	4.84 (.64)	4.88 (.55)	4.64 (.96)	4.50 (.93)

Scale 1-5: 1=not important, 2= somewhat important, 3=important, 4=very important, 5=essential

Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Printer/Plotter (e.g., deskjet, laser, photo)	1,927	4.81 (.63)	4.90 (.45)	4.84 (.56)	4.95 (.22)	4.74 (4.90)	4.79 (.65)	4.74 (.77)	4.76 (.71)	4.70 (.80)	4.74 (.83)	4.81 (.63)	4.54 (1.02)	4.63 (.74)
External storage (e.g., CD/DVD, portable hard/thumb drive)	1,869	4.21 (1.21)	4.01 (1.42)	4.31 (1.13)	4.10 (1.25)	4.05 (1.29)	3.74 (1.58)	3.97 (1.33)	4.32 (1.12)	3.78 (1.33)	4.06 (1.29)	4.21 (1.14)	3.92 (1.19)	4.14 (1.22)
Compact Disc (CD), Digital Versatile/Video Disc (DVD)	1,869	4.10 (1.25)	3.94 (1.38)	4.19 (1.20)	3.90 (1.41)	3.96 (1.30)	3.77 (1.46)	3.85 (1.30)	4.15 (1.17)	3.82 (1.26)	3.90 (1.36)	4.08 (1.26)	3.87 (1.34)	4.43 (.79)
Digital projector	1,765	3.37 (1.45)	3.19 (1.53)	3.42 (1.41)	2.65 (1.60)	3.32 (1.52)	3.09 (1.59)	3.18 (1.52)	3.32 (1.50)	3.08 (1.57)	3.63 (1.44)	3.58 (1.52)	3.29 (1.59)	2.71 (1.25)
Scanner/Optical Character Recognition (OCR)	1,817	3.24 (1.38)	2.90 (1.32)	3.30 (1.38)	3.32 (1.25)	3.18 (1.40)	3.33 (1.54)	3.02 (1.36)	3.18 (1.38)	3.00 (1.38)	3.28 (1.41)	3.22 (1.40)	3.00 (1.37)	3.71 (.95)
Digital camera	1,798	3.18 (1.45)	2.73 (1.41)	3.27 (1.43)	2.68 (1.49)	3.10 (1.47)	3.17 (1.54)	2.86 (1.43)	3.06 (1.47)	3.00 (1.34)	3.18 (1.56)	3.41 (1.34)	3.06 (1.50)	2.71 (1.50)
Handheld/PDA/Pocket PC (e.g., Palm, Compaq, Sony)	1,671	2.27 (1.47)	2.01 (1.40)	2.34 (1.50)	1.84 (1.50)	2.19 (1.42)	2.13 (1.29)	1.77 (1.25)	2.17 (1.40)	2.11 (1.24)	2.70 (1.64)	2.22 (1.50)	2.03 (1.31)	2.14 (1.46)
Use of Electronic Resources														
Personal website	1,639	2.70 (1.54)	2.20 (1.46)	2.68 (1.54)	3.22 (1.87)	2.82 (1.51)	2.82 (1.58)	2.87 (1.63)	2.95 (1.45)	2.57 (1.47)	2.70 (1.44)	2.87 (1.53)	2.97 (1.68)	2.25 (1.17)
Personal webserver	1,508	2.10 (1.33)	1.67 (1.07)	2.07 (1.32)	2.29 (1.72)	2.23 (1.35)	2.34 (1.37)	2.28 (1.38)	2.31 (1.37)	1.82 (1.08)	2.20 (1.38)	2.24 (1.41)	2.35 (1.41)	1.63 (.74)
Course-related website	1,663	3.29 (1.49)	3.05 (1.53)	3.18 (1.50)	3.79 (1.55)	3.51 (1.43)	3.47 (1.43)	3.26 (1.50)	3.65 (1.30)	3.31 (1.49)	3.59 (1.50)	3.51 (1.41)	3.94 (1.39)	2.25 (1.58)
Emailing students	1,852	4.25 (1.13)	4.19 (1.12)	4.28 (1.11)	4.55 (.76)	4.17 (1.17)	4.24 (1.07)	3.97 (1.22)	4.55 (.86)	3.83 (1.23)	4.22 (1.20)	3.92 (1.37)	3.92 (1.38)	3.71 (1.25)
Emailing colleagues within the University of Hawai'i system	1,923	4.58 (.87)	4.55 (.86)	4.63 (.80)	4.70 (.66)	4.48 (.98)	4.55 (.87)	4.41 (1.03)	4.66 (.80)	4.28 (1.04)	4.45 (1.06)	4.36 (1.09)	4.36 (1.16)	4.63 (.74)
Emailing colleagues at other institutions	1,900	4.39 (1.07)	4.28 (1.12)	4.53 (.96)	4.70 (.80)	4.12 (1.20)	4.14 (1.17)	4.00 (1.28)	4.19 (1.23)	3.94 (1.27)	4.21 (1.13)	4.01 (1.17)	4.19 (1.22)	4.63 (.74)
Electronic file attachments	1,894	4.54 (.97)	4.43 (1.05)	4.63 (.89)	4.85 (.37)	4.38 (1.09)	4.61 (.94)	4.17 (1.16)	4.53 (.99)	4.07 (1.26)	4.34 (1.10)	4.31 (1.16)	4.34 (1.17)	4.63 (.74)
Electronic listservs, bulletin boards, newsgroups	1,824	3.36 (1.38)	2.98 (1.34)	3.38 (1.37)	3.61 (1.46)	3.38 (1.40)	3.26 (1.47)	3.05 (1.37)	3.74 (1.33)	2.65 (1.30)	3.50 (1.33)	3.48 (1.49)	3.26 (1.29)	4.25 (1.17)
Electronic real-time chat	1,713	1.95 (1.20)	1.65 (.99)	1.89 (1.16)	2.72 (1.67)	2.10 (1.26)	2.11 (1.18)	1.75 (1.10)	2.16 (1.29)	1.82 (1.06)	2.47 (1.48)	2.06 (1.18)	2.13 (1.12)	2.38 (1.41)
Electronic databases (e.g.,Voyager, Academic Search Premier)	1,698	3.29 (1.60)	3.10 (1.67)	3.49 (1.57)	3.72 (1.64)	2.89 (1.57)	3.07 (1.54)	2.40 (1.56)	2.92 (1.57)	2.65 (1.45)	3.09 (1.59)	3.02 (1.66)	3.06 (1.50)	3.29 (1.11)

Scale 1-5: 1=not important, 2= somewhat important, 3=important, 4=very important, 5=essential

Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Electronic journals	1,772	3.47 (1.50)	3.23 (1.52)	3.79 (1.38)	3.83 (1.58)	2.80 (1.50)	3.04 (1.41)	2.58 (1.48)	2.86 (1.54)	2.65 (1.51)	2.82 (1.44)	2.61 (1.60)	3.19 (1.51)	2.62 (1.41)
Electronic books	1,716	2.77 (1.47)	2.44 (1.40)	2.93 (1.48)	2.56 (1.42)	2.51 (1.43)	2.85 (1.46)	2.16 (1.31)	2.54 (1.45)	2.30 (1.37)	2.63 (1.45)	2.28 (1.40)	2.91 (1.42)	2.62 (1.41)
Technology Stressors														
Learning to use technology requires a lot of time.	1,938	3.69 (1.12)	3.67 (1.01)	3.55 (1.14)	3.90 (1.25)	3.94 (1.05)	4.01 (1.01)	3.81 (1.08)	3.89 (1.15)	4.19 (.91)	4.02 (1.02)	3.92 (.95)	3.98 (1.08)	3.38 (.92)
The time it takes for me to learn how to use technology is better spent on other aspects of my work.	1,909	2.11 (1.18)	2.11 (1.16)	2.08 (1.15)	2.00 (1.08)	2.18 (1.23)	2.42 (1.26)	2.19 (1.25)	2.15 (1.29)	2.28 (1.31)	2.13 (1.26)	1.97 (.95)	2.10 (1.19)	2.38 (1.30)
Responding to email takes too much of my time.	1,923	2.63 (1.29)	2.53 (1.25)	2.70 (1.28)	2.90 (1.59)	2.49 (1.31)	2.41 (1.33)	2.56 (1.39)	2.45 (1.27)	2.46 (1.31)	2.61 (1.37)	2.47 (1.26)	2.47 (1.28)	2.25 (1.17)
I am intimidated by technology.	1,925	1.78 (1.07)	1.72 (1.03)	1.77 (1.07)	1.75 (1.02)	1.82 (1.08)	1.84 (1.09)	1.84 (1.05)	1.90 (1.22)	1.79 (1.01)	1.81 (.98)	1.64 (.97)	1.82 (1.15)	1.50 (.76)
I feel anxious about my ability to use technology.	1,924	1.83 (1.09)	1.79 (1.08)	1.80 (1.09)	1.85 (1.09)	1.87 (1.09)	1.85 (1.09)	1.97 (1.12)	1.94 (1.21)	1.80 (.96)	1.83 (1.03)	1.68 (1.03)	2.00 (1.11)	1.88 (.84)
I get stressed when I'm using technology.	1,927	1.71 (1.01)	1.66 (.93)	1.70 (1.01)	1.60 (.88)	1.73 (1.02)	1.66 (.96)	1.69 (1.02)	1.78 (1.02)	1.65 (.91)	1.73 (1.01)	1.64 (.98)	2.08 (1.29)	2.00 (1.20)
I feel pressured by my students to use technology.	1,804	1.54 (.97)	1.56 (.85)	1.57 (1.00)	1.65 (1.04)	1.49 (.93)	1.44 (.88)	1.55 (1.08)	1.61 (1.03)	1.33 (.68)	1.37 (.79)	1.53 (.94)	1.53 (.80)	1.25 (.71)
I feel pressured by older colleagues to use technology.	1,873	1.39 (.82)	1.43 (.85)	1.37 (.80)	1.35 (.67)	1.43 (.87)	1.46 (.85)	1.43 (.91)	1.56 (1.03)	1.26 (.56)	1.39 (.87)	1.32 (.74)	1.41 (.68)	1.25 (.71)
I feel pressured by younger colleagues to use technology.	1,868	1.58 (1.01)	1.63 (.96)	1.59 (1.01)	1.55 (.89)	1.57 (1.01)	1.51 (1.00)	1.49 (1.04)	1.69 (1.07)	1.44 (.84)	1.59 (1.01)	1.68 (1.09)	1.46 (.88)	1.25 (.71)
I feel pressured by my department chair to use technology.	1,831	1.40 (.87)	1.37 (.79)	1.40 (.88)	1.42 (.61)	1.42 (.88)	1.45 (1.00)	1.34 (.79)	1.56 (.98)	1.28 (.71)	1.48 (.98)	1.27 (.63)	1.31 (.77)	1.25 (.71)
I feel pressured by competitors (e.g., other programs, departments) to use technology).	1,819	1.68 (1.08)	1.64 (1.16)	1.69 (1.08)	1.79 (1.23)	1.66 (1.08)	1.60 (1.02)	1.68 (1.17)	1.83 (1.21)	1.57 (.88)	1.64 (1.06)	1.58 (1.01)	1.53 (.96)	1.25 (.71)
Technology Skills														
My technology skills are adequate in meeting my work-related needs.	1,939	3.64 (1.05)	3.58 (.98)	3.64 (1.06)	3.65 (.88)	3.64 (1.05)	3.65 (.97)	3.63 (1.10)	3.60 (1.06)	3.53 (1.17)	3.58 (.98)	3.85 (1.04)	3.66 (1.02)	3.88 (1.13)
I am knowledgeable about integrating technology components into my courses.	1,739	3.20 (1.19)	3.12 (1.22)	3.65 (1.04)	3.65 (1.04)	3.22 (1.19)	3.04 (1.12)	3.36 (1.29)	3.24 (1.20)	2.92 (1.15)	3.27 (1.19)	3.32 (1.11)	3.26 (1.27)	3.43 (1.13)
I am able to resolve most of my technology-related problems on my own.	1,933	2.94 (1.22)	2.97 (1.20)	2.65 (1.14)	2.65 (1.14)	2.94 (1.21)	2.92 (1.15)	3.04 (1.28)	2.86 (1.25)	2.65 (1.15)	3.06 (1.13)	3.04 (1.19)	2.78 (1.31)	3.38 (1.19)

Scale 1-5: 1=no agreement, 2=slightly agree, 3=moderately agree, 4=strongly agree, 5=completely agree

Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
I have the ability to create a website.	1,894	2.49 (1.56)	2.44 (1.54)	2.35 (1.46)	2.35 (1.46)	2.48 (1.55)	2.27 (1.53)	2.46 (1.63)	2.53 (1.48)	2.17 (1.42)	2.66 (1.55)	2.58 (1.66)	2.51 (1.57)	2.25 (1.58)
I have the ability to install the software I need to perform my work.	1,916	3.43 (1.42)	3.48 (1.37)	3.20 (1.28)	3.20 (1.28)	3.31 (1.46)	3.15 (1.44)	3.36 (1.48)	3.39 (1.43)	3.07 (1.33)	3.30 (1.51)	3.43 (1.48)	3.22 (1.54)	4.00 (1.07)
Trouble-shooting technology-related problems appeals to me.	1,924	2.12 (1.31)	2.11 (1.30)	1.90 (1.37)	1.90 (1.37)	2.14 (1.35)	2.17 (1.43)	2.20 (1.43)	2.16 (1.35)	1.93 (1.18)	2.17 (1.39)	2.16 (1.28)	1.85 (1.20)	2.75 (1.75)
I know more about using technology than most of my students.	1,740	2.67 (1.43)	2.72 (1.41)	2.55 (1.40)	2.55 (1.40)	2.84 (1.45)	2.85 (1.43)	2.82 (1.53)	2.84 (1.33)	2.50 (1.43)	2.89 (1.55)	3.01 (1.49)	2.78 (1.51)	3.38 (1.06)
I know more about using technology than most of my colleagues.	1,833	2.70 (1.38)	2.73 (1.34)	2.70 (1.46)	2.70 (1.46)	2.74 (1.42)	2.65 (1.36)	2.67 (1.54)	2.76 (1.34)	2.46 (1.39)	2.83 (1.46)	2.91 (1.41)	2.76 (1.53)	2.86 (1.22)
I know more about using technology than my department chair.	1,482	2.55 (1.52)	2.50 (1.51)	2.67 (1.78)	2.67 (1.78)	2.51 (1.53	2.48 (1.50)	2.54 (1.62)	2.34 (1.43)	2.04 (1.49)	2.60 (1.58)	2.86 (1.45)	2.83 (1.67)	3.17 (1.33)
Availability of Resources to Support Technology Needs														
I have convenient access to technology resources on my campus to support my research activities.	1,675	3.40 (1.24)	3.45 (1.18)	3.38 (1.23)	3.40 (1.35)	3.42 (1.28)	3.25 (1.27)	3.48 (1.32)	3.28 (1.24)	3.28 (1.30)	3.54 (1.29)	3.56 (1.31)	3.82 (1.22)	3.57 (1.13)
I have convenient access to technology resources on my campus to support my teaching activities.	1,707	3.39 (1.24)	3.56 (1.24)	3.36 (1.21)	3.83 (1.15)	3.40 (1.28)	3.16 (1.33)	3.41 (1.31)	3.33 (1.23)	3.33 (1.28)	3.64 (1.26)	3.43 (1.33)	3.64 (1.20)	3.29 (1.50)
I have convenient access to technology resources on my campus to support my service activities.	1,628	3.32 (1.26)	3.33 (1.20)	3.31 (1.24)	3.68 (1.20)	3.32 (1.30)	3.11 (1.31)	3.37 (1.30)	3.26 (1.24)	3.17 (1.31)	3.49 (1.26)	3.41 (1.42)	3.44 (1.31)	3.63 (1.51)
When I need technical assistance, I seek help from my colleagues before seeking help elsewhere.	1,895	3.04 (1.43)	2.86 (1.50)	3.02 (1.42)	2.40 (1.57)	3.14 (1.42)	3.02 (1.45)	3.26 (1.45)	2.94 (1.42)	3.32 (1.43)	3.12 (1.47)	3.33 (1.28)	3.20 (1.36)	4.00 (1.20)
When I need technical assistance, I seek help from the campus support services (e.g,. ITS) before seeking help elsewhere.	1,880	2.86 (1.46)	2.85 (1.45)	2.60 (1.40)	4.10 (1.07)	3.30 (1.45)	3.37 (1.55)	3.09 (1.50)	3.36 (1.44)	3.43 (1.46)	3.50 (1.36)	2.89 (1.44)	3.39 (1.26)	3.25 (1.76)
I am able to obtain technical help quickly when I need it.	1,859	3.13 (1.28)	2.75 (1.34)	3.10 (1.26)	3.90 (.97)	3.22 (1.30)	3.16 (1.43)	3.38 (1.29)	3.15 (1.23)	2.94 (1.30)	3.62 (1.20)	2.74 (1.31)	3.44 (1.18)	3.13 (1.46)
Adequate funding is available from my department to purchase updated hardware and software as needed.	1,668	2.00 (1.24)	2.11 (1.23)	2.04 (1.27)	3.00 (1.51)	1.87 (1.17)	1.85 (1.06)	1.77 (1.14)	1.82 (1.18)	1.94 (1.16)	2.18 (1.34)	1.58 (1.00)	1.91 (1.17)	2.38 (1.06)
Adequate funding is available from my department to attend technology workshops.	1,471	1.77 (1.08)	1.57 (.92)	1.76 (1.11)	2.86 (1.46)	1.78 (1.04)	1.73 (.96)	1.81 (1.11)	1.67 (.96)	1.89 (1.02)	2.01 (1.30)	1.49 (.73)	1.91 (.98)	2.38 (1.06)

Scale 1-5: 1=no agreement, 2=slightly agree, 3=moderately agree, 4=strongly agree, 5=completely agree

Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Technology Use in Performing Professional Work														
Technology is an important tool for conducting my research.	1,616	4.25 (1.13)	4.10 (1.20)	4.41 (.98)	4.42 (.90)	3.87 (1.36)	3.90 (1.39)	3.82 (1.40)	3.95 (1.28)	3.94 (1.20)	3.82 (1.46)	4.05 (1.38)	3.50 (1.57)	3.83 (.75)
Technology is an important tool for conducting my instructional work.	1,743	4.21 (1.05)	4.12 (1.17)	4.21 (1.02)	4.55 (.83)	4.23 (1.10)	4.11 (1.17)	4.24 (1.13)	4.26 (1.05)	4.27 (1.02)	4.35 (1.07)	4.30 (1.00)	3.84 (1.41)	4.29 (.76)
Technology is an important tool for conducting my service activities.	1,649	3.77 (1.27)	3.47 (1.40)	3.84 (1.24)	3.56 (1.50)	3.70 (1.31)	3.63 (1.28)	3.53 (1.39)	3.75 (1.31)	3.67 (1.30)	3.84 (1.34)	3.72 (1.17)	3.51 (1.46)	4.25 (.89)
Overall, technology has helped to increase my productivity.	1,905	4.27 (1.04)	4.18 (1.04)	4.37 (.96)	4.11 (1.24)	4.11 (1.14)	4.14 (1.17)	4.02 (1.22)	4.02 (1.20)	4.20 (1.04)	4.29 (1.02)	4.25 (1.09)	3.73 (1.23)	4.38 (.75)
Institutional Recognition for Using Technology														
Faculty who use technology are recognized by the institution.	1,245	2.46 (1.27)	2.42 (1.14)	2.27 (1.22)	2.76 (1.52)	2.74 (1.29)	2.28 (1.24)	2.78 (1.36)	2.89 (1.34)	2.49 (1.23)	2.89 (1.28)	3.06 (1.19)	2.32 (1.05)	3.00 (1.41)
Faculty who incorporate technology in the classroom instruction are valued by the institution.	1,355	2.90 (1.22)	2.83 (1.12)	2.74 (1.22)	3.61 (1.38)	3.14 (1.18)	2.84 (1.22)	3.13 (1.16)	3.36 (1.10)	2.98 (1.27)	3.15 (1.19)	3.40 (1.15)	2.76 (1.20)	3.00 (.89)
Expectation of Being Rewarded for Using Technology														
Faculty who use technology should be rewarded by the institution.	1,626	2.84 (1.37)	2.74 (1.36)	2.78 (1.35)	3.33 (1.57)	2.94 (1.39)	3.01 (1.48)	2.84 (1.37)	3.07 (1.37)	3.06 (1.54)	2.80 (1.32)	2.97 (1.41)	2.79 (1.38)	2.67 (1.03)
There should be incentives for faculty to use technology in classroom instruction.	1,675	3.17 (1.37)	3.09 (1.44)	3.09 (1.35)	3.89 (1.37)	3.31 (1.38)	3.59 (1.43)	3.11 (1.40)	3.34 (1.23)	3.40 (1.40)	3.23 (1.48)	3.46 (1.41)	2.97 (1.40)	3.17 (1.33)
Ramifications of Technology Use on Career														
Using technology offers few career advantages at my institution.	1,272	2.65 (1.32)	2.59 (1.19)	2.67 (1.32)	2.85 (1.52)	2.62 (1.33)	2.70 (1.48)	2.51 (1.39)	2.68 (1.27)	2.65 (1.42)	2.55 (1.34)	2.48 (1.27)	2.70 (1.29)	3.33 (1.03)
Using technology is not considered in promotion and tenure.	1,094	3.15 (1.40)	3.51 (1.22)	3.34 (1.38)	2.75 (1.36)	2.76 (1.40)	3.14 (1.36)	2.82 (1.54)	2.56 (1.34)	2.91 (1.42)	2.74 (1.48)	2.62 (1.29)	2.91 (1.31)	2.75 (.96)
Distance Education Stressors														
Teaching distance education courses takes more time than traditional face-to-face courses.	1,091	3.95 (1.24)	4.07 (1.23)	3.85 (1.24)	4.28 (1.13)	4.07 (1.23)	4.15 (1.28)	4.06 (1.15)	3.97 (1.30)	4.06 (1.23)	4.14 (1.25)	4.28 (1.08)	3.84 (1.14)	2.75 (1.71)
The time it would take to teach a distance education course would be better spent on other aspects of my work.	1,106	2.82 (1.52)	2.85 (1.60)	2.91 (1.50)	2.33 (1.37)	2.70 (1.56)	2.70 (1.53)	3.08 (1.60)	2.77 (1.59)	2.65 (1.54)	2.71 (1.63)	2.17 (1.32)	2.81 (1.55)	2.00 (1.41)

Scale 1-5: 1=no agreement, 2=slightly agree, 3=moderately agree, 4=strongly agree, 5=completely agree

Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
I feel pressured by my students to teach distance education courses.	1,266	1.39 (.87)	1.28 (.74)	1.37 (.84)	2.12 (1.36)	1.42 (.90)	1.54 (1.06)	1.30 (.74)	1.38 (.84)	1.52 (1.00)	1.40 (.93)	1.65 (1.07)	1.19 (.47)	1.00 (.0)
I feel pressured by my colleagues to teach distance education courses.	1,296	1.53 (.98)	1.29 (.66)	1.48 (.94)	2.19 (1.56)	1.61 (1.06)	1.58 (1.02)	1.51 (.98)	1.75 (1.19)	1.73 (1.11)	1.47 (.97)	1.89 (1.17)	1.18 (.47)	1.00 (.0)
I feel pressured by my department chair to teach distance education courses.	1,233	1.45 (.96)	1.24 (.69)	1.40 (.88)	2.06 (1.57)	1.53 (1.06)	1.53 (1.01)	1.44 (.91)	1.65 (1.22)	1.65 (1.21)	1.36 (.91)	1.82 (1.22)	1.07 (.25)	1.00 (.0)
I feel pressured by my dean to teach distance education courses.	1,268	1.54 (1.06)	1.39 (.88)	1.44 (.97)	1.93 (1.39)	1.69 (1.19)	1.57 (1.04)	1.72 (1.24)	1.81 (1.34)	1.98 (1.36)	1.53 (1.02)	1.87 (1.29)	1.22 (.49)	1.00 (.0)
I feel pressured by competitors (e.g., other programs, departments) to teach distance education courses.	1,289	1.73 (1.16)	1.80 (1.21)	1.69 (1.11)	2.25 (1.65)	1.76 (1.21)	1.94 (1.28)	1.86 (1.31)	1.96 (1.34)	1.75 (1.06)	1.59 (1.19)	1.67 (1.03)	1.16 (.45)	1.00 (.0)
Distance Education Instructional Skills														
I have the skills needed to teach distance education courses.	1,270	2.71 (1.46)	2.85 (1.46)	2.64 (1.43)	3.28 (1.57)	2.78 (1.50)	2.71 (1.58)	2.71 (1.49)	2.58 (1.47)	2.46 (1.33)	3.05 (1.55)	3.36 (1.39)	2.46 (1.50)	1.60 (.89)
I am knowledgeable on developing instructional materials for distance education courses.	1,323	2.37 (1.40)	2.43 (1.41)	2.27 (1.35)	3.17 (1.58)	2.50 (1.45)	2.45 (1.41)	2.35 (1.43)	2.35 (1.42)	2.31 (1.42)	2.74 (1.59)	3.02 (1.37)	2.27 (1.36)	1.40 (.55)
Motivators for Teaching Distance Education														
I would/do teach distance education courses because it provides me with more flexible working conditions.	1,195	2.29 (1.41)	2.16 (1.41)	2.23 (1.38)	3.00 (1.67)	2.38 (1.46)	2.49 (1.44)	2.24 (1.47)	2.37 (1.50)	2.50 (1.44)	2.53 (1.49)	2.42 (1.43)	1.93 (1.33)	1.33 (.58)
I would/do teach distance education courses because it enables me to learn more about technology.	1,243	2.38 (1.44)	2.17 (1.48)	2.28 (1.38)	3.13 (1.46)	2.55 (1.51)	2.92 (1.55)	2.42 (1.59)	2.49 (1.49)	2.53 (1.40)	2.70 (1.50)	2.61 (1.46)	1.93 (1.44)	1.50 (.58)
I would/do teach distance education courses because it helps my students to become more involved with technology.	1,235	2.39 (1.39)	2.01 (1.41)	2.29 (1.33)	2.88 (1.54)	2.62 (1.46)	3.12 (1.49)	2.42 (1.53)	2.43 (1.40)	2.71 (1.47)	2.69 (1.43)	2.89 (1.40)	1.93 (1.36)	2.25 (.96)
I would/do teach distance education course because it provides my students with more flexible learning opportunities.	1,241	3.12 (1.49)	3.08 (1.55)	3.02 (1.46)	3.88 (1.41)	3.25 (1.50)	3.70 (1.48)	3.11 (1.54)	3.09 (1.45)	3.40 (1.27)	3.11 (1.62)	3.75 (1.33)	2.63 (1.61)	2.75 (.96)
Offering distance education courses is viewed very favorably by senior administration at my institution.	411	2.91 (1.47)	3.37 (1.40)	2.63 (1.45)	2.90 (1.20)	3.20 (1.45)	2.08 (1.04)	3.20 (1.40)	3.29 (1.49)	3.40 (1.55)	3.72 (1.46)	3.56 (1.28)	2.83 (1.17)	**

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Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Quality of Distance Education Instruction and Learning														
The quality of instruction in distance education courses is at least as good as face-to-face classroom instruction.	1,284	2.18 (1.29)	2.06 (1.26)	2.06 (1.25)	3.00 (1.46)	2.34 (1.33)	2.45 (1.29)	2.19 (1.31)	2.26 (1.32)	2.23 (1.25)	2.61 (1.43)	2.49 (1.31)	1.97 (1.22)	1.60 (1.34)
The quality of learning in distance education courses is at least as good as face-to-face classroom learning.	1,268	2.16 (1.27)	2.06 (1.20)	2.02 (1.22)	3.00 (1.46)	2.34 (1.32)	2.37 (1.25)	2.07 (1.27)	2.33 (1.30)	2.18 (1.24)	2.61 (1.42)	2.57 (1.30)	2.03 (1.27)	1.60 (1.34)
The quality of instructor-to-student interaction in distance education courses is at least as good as face-to-face classroom interaction.	1,292	1.91 (1.18)	1.63 (1.05)	1.80 (1.12)	2.60 (1.40)	2.10 (1.24)	1.97 (1.13)	1.84 (1.07)	2.16 (1.26)	2.16 (1.24)	2.40 (1.42)	2.16 (1.22)	1.81 (1.17)	1.60 (1.34)
The quality of students in distance education courses is at least as good as that found in face-to-face classrooms.	997	2.64 (1.39)	2.86 (1.50)	2.44 (1.35)	3.80 (1.21)	2.84 (1.39)	2.63 (1.31)	2.65 (1.38)	2.73 (1.31)	2.79 (1.40)	3.12 (1.42)	3.48 (1.34)	2.22 (1.31)	1.80 (1.30)
The quality of students' work in distance education courses is at least as good as that found in face-to-face classrooms.	957	2.59 (1.34)	2.70 (1.41)	2.40 (1.28)	3.57 (1.34)	2.81 (1.36)	2.70 (1.28)	2.55 (1.32)	2.70 (1.31)	2.77 (1.38)	3.07 (1.45)	3.35 (1.25)	2.20 (1.40)	1.80 (1.30)
Technical Support for Distance Education														
Adequate technical support is available to faculty who teach distance education courses.	733	2.56 (1.30)	2.34 (1.34)	2.41 (1.28)	3.50 (.94)	2.73 (1.30)	2.05 (1.25)	2.64 (1.13)	2.68 (1.41)	2.54 (1.22)	3.48 (1.14)	2.74 (1.12)	2.61 (1.34)	1.67 (1.16)
Adequate technical support is available to students who take distance education courses.	653	2.30 (1.19)	2.20 (1.12)	2.18 (1.14)	3.08 (1.04)	2.40 (1.24)	1.80 (1.00)	2.19 (1.02)	2.25 (1.36)	2.36 (1.26)	3.24 (1.13)	2.41 (1.19)	2.38 (.96)	2.00 (1.41)
Availability of Distance Education Training and Development														
There are adequate opportunities at my campus to receive training for teaching distance education courses.	828	2.65 (1.31)	2.39 (1.30)	2.61 (1.29)	3.73 (.88)	2.69 (1.33)	2.11 (1.16)	2.87 (1.25)	2.78 (1.42)	2.52 (1.24)	3.42 (1.26)	2.46 (1.15)	2.11 (1.32)	2.00 (1.73)
There are opportunities at my campus to learn how to develop instructional materials for distance education courses.	852	2.69 (1.28)	2.47 (1.32)	2.64 (1.23)	3.64 (.75)	2.73 (1.32)	2.04 (1.09)	2.76 (1.29)	2.88 (1.35)	2.56 (1.29)	3.51 (1.24)	2.47 (1.12)	2.43 (1.25)	2.00 (1.73)

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Appendix G. Means and Standard Deviations of Technology and Distance Education Statements by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
There are opportunities at my campus for experienced and non-experienced faculty to collaborate on distance education courses	777	2.50 (1.25)	2.17 (1.25)	2.38 (1.19)	2.92 (1.26)	2.67 (1.30)	2.24 (1.07)	2.67 (1.26)	2.67 (1.30)	2.26 (1.15)	3.58 (1.24)	2.30 (1.19)	2.58 (1.31)	2.00 (1.73)
Distance Education Valued by Institution														
Faculty are recognized by the institution for teaching distance education courses.	763	2.15 (1.22)	2.08 (1.24)	1.82 (1.04)	2.87 (1.25)	2.51 (1.28)	1.75 (1.02)	2.55 (1.26)	2.65 (1.36)	2.38 (1.40)	3.00 (1.24)	2.57 (1.17)	2.14 (1.10)	2.50 (.71)
Faculty are rewarded for teaching distance education courses.	739	1.93 (1.14)	1.96 (1.20)	1.72 (1.01)	2.43 (1.45)	2.15 (1.22)	1.49 (.85)	2.48 (1.34)	2.47 (1.34)	1.88 (1.11)	2.49 (1.17)	1.93 (1.07)	1.63 (.81)	**
Faculty who teach distance education courses are adequately compensated.	695	1.94 (1.18)	2.08 (1.24)	1.82 (1.09)	3.13 (1.36)	2.00 (1.24)	1.56 (.93)	2.13 (1.26)	2.20 (1.32)	1.89 (1.10)	2.24 (1.45)	1.60 (.82)	2.25 (1.34)	3.50 (2.12)
Voluntary Participation in Distance Education														
My department chair does not require me to teach distance education courses.	608	4.19 (1.35)	4.05 (1.54)	4.20 (1.37)	3.89 (1.36)	4.21 (1.28)	3.68 (1.56)	4.69 (.81)	4.23 (1.38)	4.00 (1.49)	4.35 (1.21)	4.06 (1.15)	4.58 (.67)	**
If I teach distance education courses, it will be based entirely on my decision to do so.	654	3.85 (1.48)	4.10 (1.39)	3.80 (1.50)	4.09 (1.22)	3.87 (1.48)	3.37 (1.52)	4.33 (1.32)	3.74 (1.65)	4.00 (1.59)	4.31 (1.18)	3.38 (1.50)	4.31 (.95)	**
Advantages of Distance Education														
I teach distance education courses efficiently.	417	3.36 (1.37)	3.30 (1.40)	3.13 (1.35)	4.20 (.92)	3.63 (1.35)	3.33 (1.43)	3.28 (1.41)	3.47 (1.49)	3.25 (1.91)	4.19 (1.03)	3.64 (1.22)	4.25 (.71)	**
The quality of distance education courses is at least as good as traditional face-to-face courses.	565	2.61 (1.43)	2.49 (1.31)	2.42 (1.41)	3.64 (1.63)	2.82 (1.43)	2.38 (1.37)	2.53 (1.44)	3.00 (1.48)	3.06 (1.34)	3.30 (1.61)	2.78 (1.20)	2.42 (1.08)	2.00 (1.00)
Teaching distance education courses increases my workload.	503	3.78 (1.39)	3.97 (1.40)	3.77 (1.36)	4.36 (1.29)	3.73 (1.44)	3.55 (1.66)	3.58 (1.27)	3.45 (1.62)	3.31 (1.60)	4.18 (1.18)	4.00 (1.29)	4.11 (.78)	**
Distance education courses provides more opportunities for students.	616	3.80 (1.32)	4.13 (1.14)	3.62 (1.36)	4.67 (.89)	3.91 (1.29)	3.88 (1.49)	3.79 (1.22)	3.41 (1.44)	4.37 (.83)	4.25 (1.19)	4.21 (1.08)	4.00 (1.00)	2.67 (.58)
The advantages of distance education courses far outweigh the disadvantages.	576	3.01 (1.44)	3.19 (1.27)	2.78 (1.42)	3.77 (1.42)	3.22 (1.44)	3.03 (1.51)	2.82 (1.49)	2.86 (1.48)	3.47 (1.26)	3.83 (1.39)	3.36 (1.29)	3.27 (1.10)	2.67 (1.53)
I derive great personal satisfaction from teaching distance education courses.	418	3.03 (1.48)	3.13 (1.53)	2.78 (1.43)	3.91 (1.14)	3.35 (1.48)	2.71 (1.52)	3.69 (1.62)	3.02 (1.51)	3.67 (1.66)	4.25 (1.05)	3.19 (1.28)	2.89 (1.69)	**

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	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Compatibility with Work Style														
Teaching distance education courses is compatible with all aspects of my professional work.	567	2.81 (1.51)	2.56 (1.55)	2.60 (1.45)	3.50 (1.51)	3.11 (1.53)	3.04 (1.48)	2.93 (1.70)	2.82 (1.61)	3.50 (1.23)	3.65 (1.53)	3.12 (1.29)	2.75 (1.55)	**
Teaching distance education courses is compatible with the way that I like to work.	588	2.67 (1.49)	2.49 (1.47)	2.50 (1.42)	3.42 (1.44)	2.92 (1.55)	2.80 (1.56)	3.00 (1.74)	2.69 (1.49)	2.88 (1.46)	3.51 (1.67)	2.86 (1.29)	2.31 (1.38)	**
Teaching distance education courses is compatible with my work style.	594	2.72 (1.50)	2.56 (1.50)	2.55 (1.42)	3.42 (1.38)	2.95 (1.58)	2.80 (1.54)	2.90 (1.70)	2.81 (1.57)	2.81 (1.47)	3.52 (1.69)	2.89 (1.43)	2.43 (1.51)	**
Enhancement of Self-Image														
Teaching distance education courses improves my image within my department.	425	2.39 (1.40)	2.10 (1.35)	2.20 (1.33)	2.80 (1.32)	2.70 (1.45)	2.43 (1.31)	2.10 (1.38)	2.80 (1.62)	3.09 (1.30)	3.31 (1.42)	2.67 (1.27)	2.00 (1.27)	**
Because I teach distance education courses, I am viewed by my colleagues as being more valuable.	352	2.28 (1.37)	2.00 (1.41)	2.09 (1.29)	2.60 (1.27)	2.58 (1.44)	2.11 (1.29)	2.13 (1.46)	2.46 (1.54)	2.86 (1.35)	3.08 (1.41)	2.92 (1.35)	2.50 (1.29)	**
Faculty in my department/division organization who teach distance education courses have more prestige than those who don't.	420	1.79 (1.14)	1.59 (1.13)	1.67 (1.06)	1.90 (.74)	1.97 (1.23)	1.57 (.95)	1.65 (1.37)	2.16 (1.32)	2.15 (1.14)	2.06 (1.31)	2.18 (1.12)	1.80 (1.30)	**
When in the presence of senior members from my department, I try to present myself as being competent with technology.	1,645	2.45 (1.35)	2.36 (1.32)	2.46 (1.35)	2.11 (1.29)	2.45 (1.37)	2.26 (1.21)	2.39 (1.39)	2.40 (1.31)	2.53 (1.47)	2.06 (1.45)	2.73 (1.41)	2.28 (1.37)	2.13 (1.13)
When in the presence of my department chair, I try to present myself as being competent with technology.	1,582	2.42 (1.35)	2.27 (1.31)	2.45 (1.36)	2.06 (1.21)	2.42 (1.35)	2.16 (1.18)	2.28 (1.39)	2.43 (1.30)	2.40 (1.42)	2.48 (1.38)	2.88 (1.42)	2.27 (1.39)	2.25 (1.17)
When in the presence of senior members from my department, I try to present myself as being knowledgeable about distance education.	1,167	1.83 (1.21)	1.99 (1.30)	1.69 (1.13)	2.12 (1.17)	2.00 (1.29)	1.92 (1.15)	1.96 (1.27)	1.94 (1.27)	1.89 (1.24)	2.11 (1.39)	2.54 (1.35)	1.46 (1.07)	1.40 (.89)
When in the presence of my department chair, I try to present myself as being knowledgeable about distance education.	1,136	1.79 (1.21)	1.89 (1.27)	1.65 (1.12)	2.12 (1.17)	2.00 (1.31)	1.82 (1.12)	2.00 (1.30)	1.96 (1.30)	1.89 (1.29)	2.12 (1.41)	2.57 (1.44)	1.46 (1.03)	1.20 (.45)

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	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Ease in Using Distance Education														
Teaching distance education courses is often hard to do.	528	3.41 (1.32)	3.30 (1.10)	3.34 (1.37)	3.25 (1.49)	3.55 (1.27)	3.59 (1.02)	3.60 (1.29)	3.74 (1.34)	3.07 (1.10)	3.78 (1.31)	3.23 (1.33)	3.64 (1.03)	**
It is difficult to learn how to use the technologies that are needed to teach distance education courses.	547	2.67 (1.28)	2.53 (1.08)	2.60 (1.30)	2.58 (1.17)	2.79 (1.31)	3.17 (1.14)	2.96 (1.17)	2.75 (1.44)	2.69 (1.08)	2.68 (1.51)	2.50 (1.19)	3.09 (1.30)	**
Teaching distance education courses is often frustrating.	481	3.30 (1.33)	3.62 (1.14)	3.29 (1.32)	3.25 (1.29)	3.26 (1.37)	3.38 (.94)	3.33 (1.39)	3.14 (1.56)	3.25 (1.22)	3.21 (1.53)	3.30 (1.36)	3.44 (1.42)	**
Able to Share Results of Distance Education														
I can discuss my distance education experiences with my colleagues.	449	3.27 (1.35)	3.32 (1.43)	3.04 (1.38)	3.80 (1.03)	3.53 (1.26)	3.44 (1.28)	3.11 (1.23)	3.41 (1.36)	3.67 (1.23)	3.94 (1.08)	3.79 (1.15)	2.57 (1.27)	**
I can communicate to others my results in using distance education technologies.	436	3.29 (1.29)	3.26 (1.40)	3.80 (1.03)	3.45 (1.21)	3.50 (1.24)	3.31 (1.32)	3.00 (1.56)	3.46 (1.37)	3.80 (1.03)	3.91 (1.01)	3.56 (1.24)	3.29 (1.11)	**
Able to See Results of Distance Education														
I personally know of other colleagues in my department who teach distance education courses.	633	3.53	3.74 (1.73)	3.09 (1.78)	4.75 (.87)	4.07 (1.39)	4.08 (1.37)	3.89 (1.63)	4.00 (1.35)	4.20 (1.21)	4.39 (1.31)	4.45 (.91)	2.42 (1.78)	**
It is easy for me to observe other faculty in my department who teach distance education courses.	572	2.50 (1.52)	2.28 (1.57)	2.16 (1.43)	3.09 (1.04)	3.00 (1.52)	2.77 (1.40)	2.96 (1.57)	2.82 (1.56)	3.23 (1.48)	3.30 (1.54)	3.52 (1.37)	1.83 (1.53)	**
I have had lots of opportunity to see how distance education is being used.	664	2.52 (1.48)	2.54 (1.64)	2.21 (1.36)	3.45 (1.04)	2.92 (1.53)	2.80 (1.36)	2.87 (1.41)	2.66 (1.62)	3.00 (1.66)	3.11 (1.54)	3.59 (1.46)	2.07 (1.44)	2.50 (2.12)
Able to Try-Out Distance Education														
I have had lots of opportunities to learn how to teach distance education courses.	645	2.33 (1.38)	2.33 (1.33)	2.10 (1.30)	3.09 (1.04)	2.66 (1.46)	2.43 (1.44)	2.53 (1.38)	2.58 (1.46)	2.39 (1.34)	3.17 (1.57)	2.76 (1.39)	2.17 (1.27)	2.50 (2.12)
I am able to receive training prior to deciding whether to teach a distance education course.	506	2.57 (1.39)	2.49 (1.30)	2.48 (1.39)	3.56 (1.33)	2.67 (1.41)	2.34 (1.39)	2.25 (1.25)	2.63 (1.48)	2.64 (1.22)	3.41 (1.46)	2.39 (1.17)	2.92 (1.38)	**
I know where I can go on campus to learn how to use distance education technologies for teaching.	623	2.87 (1.53)	2.80 (1.42)	2.61 (1.53)	4.18 (.98)	3.19 (1.48)	2.53 (1.54)	2.85 (1.29)	3.27 (1.50)	3.20 (1.54)	3.78 (1.47)	3.44 (1.19)	2.75 (1.42)	2.50 (2.12)

Scale 1-5: 1=no agreement, 2=slightly agree, 3=moderately agree, 4=strongly agree, 5=completely agree

**Indicates single response which is not being reported to avoid possible breach of confidentiality

Appendix H. Means and Standard Deviations of the Key Dimensional Constructs by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Technology Use														
Using software applications in conducting professional work	1,946	2.88 (.87)	2.57 (.84)	2.92 (.83)	2.71 (.86)	2.86 (.93)	2.83 (.90)	2.72 (.97)	2.88 (.87)	2.72 (.85)	2.90 (.96)	3.09 (.92)	2.94 (1.07)	2.48 (.55)
Using hardware equipment in conducting professional work	1,938	3.81 (.82)	3.63 (.81)	3.86 (.78)	3.56 (.81)	3.76 (.87)	3.74 (.98)	3.65 (.85)	3.83 (.80)	3.66 (.90)	3.84 (.89)	3.87 (.80)	3.55 (1.00)	3.78 (.77)
Using e-resources in conducting professional work	1,937	3.48 (.84)	3.24 (.82)	3.53 (.80)	3.80 (.89)	3.40) (.90)	3.52 (.83)	3.20 (.92)	3.55 (.85)	3.07 (.79)	3.45 (.96)	3.30 (.93)	3.49 (.99)	3.24 (.43)
Attitude Toward Technology														
Using technology is stressful	1,945	1.97 (.73)	1.93 (.69)	1.96 (.74)	1.99 (.75)	1.99 (.72)	1.98 (.72)	2.00 (.72)	2.07 (.85)	1.92 (.58)	1.99 (.65)	1.88 (.62)	1.99 (.64)	1.78 (.59)
I am skillful in using technology	1,946	2.89 (1.04)	2.88 (1.02)	2.89 (1.03)	2.83 (1.05)	2.90 (1.07)	2.84 (1.01)	2.91 (1.19)	2.91 (1.03)	2.66 (.98)	2.96 (1.07)	3.02 (1.06)	2.85 (1.15)	3.24 (.96)
Resources are available to support technology needs	1,933	2.90 (.83)	2.83 (.79)	2.87 (.82)	3.87 (.89)	2.95 (.85)	2.88 (.91)	2.95 (.83)	2.89 (.79)	2.88 (.85)	3.16 (.89)	2.82 (.81)	3.14 (.83)	3.17 (1.00)
Technology is important for conducting professional work	1,935	4.14 (.92)	3.98 (1.00)	4.22 (.84)	4.12 (.84)	4.02 (1.02)	3.96 (1.08)	3.97 (1.06)	4.00 (1.00)	4.10 (.94)	4.13 (1.02)	4.16 (.86)	3.68 (1.22)	4.28 (.73)
Institutional recognizes those using technology	1,433	2.71 (1.16)	2.68 (1.03)	2.54 (1.15)	3.22 (1.32)	2.98 (1.14)	2.65 (1.17)	2.95 (1.21)	3.17 (1.09)	2.80 (1.21)	3.07 (1.12)	3.23 (1.01)	2.53 (1.09)	3.08 (.74)
I expect to be rewarded for using technology	1.768	2.99 (1.27)	2.91 (1.29)	2.93 (1.26)	3.61 (1.36)	3.11 (1.29)	3.27 (1.35)	2.97 (1.31)	3.19 (1.15)	3.21 (1.38)	3.01 (1.31)	3.21 (1.34)	2.85 (1.32)	2.92 (1.07)
Using technology has little impact on my career	1,357	2.84 (1.26)	2.91 (1.11)	2.94 (1.26)	2.73 (1.24)	2.67 (1.27)	2.85 (1.32)	2.71 (1.36)	2.60 (1.23)	2.67 (1.33)	2.62 (1.26)	2.54 (1.21)	2.77 (1.21)	3.25 (1.08)
Attitude Toward Distance Education														
Delivering distance education instruction is stressful	1,494	2.07 (.97)	2.03 (.95)	2.04 (.95)	2.54 (1.12)	2.12 (.98)	2.25 (1.02)	2.13 (.97)	2.16 (1.04)	2.10 (.92)	2.04 (.90)	2.24 (1.04)	1.80 (.83)	1.75 (.84)
I have distance education instructional skills	1,351	2.50 (1.38)	2.58 (1.40)	2.41 (1.34)	3.22 (1.56)	2.60 (1.42)	2.56 (1.42)	2.47 (1.38)	2.43 (1.37)	2.35 (1.34)	2.84 (1.54)	3.18 (1.31)	2.32 (1.40)	1.50 (.71)
I am motivated to teach distance education courses	1,317	2.57 (1.22)	2.50 (1.24)	2.47 (1.17)	3.22 (1.20)	2.74 (1.27)	2.98 (1.25)	2.63 (1.32)	2.64 (1.27)	2.86 (1.20)	2.82 (1.30)	2.98 (1.16)	2.12 (1.21)	1.95 (.23)
The quality fo distance education instruction and learning is as good as face-to-face	1,352	2.19 (1.16)	2.18 (1.07)	2.04 (1.10)	3.22 (1.20)	2.39 (1.20)	2.42 (1.10)	2.15 (1.10)	2.33 (1.17)	2.29 (1.26)	2.63 (1.37)	2.73 (1.14)	1.95 (1.09)	1.68 (1.31)
Technical support is available for distance education	753	2.46 (1.22)	2.29 (1.19)	2.34 (1.20)	3.29 (.91)	2.58 (1.23)	1.93 (1.08)	2.51 (1.06)	2.54 (1.36)	2.50 (1.17)	3.32 (1.10)	2.52 (1.12)	2.53 (1.15)	1.67 (1.31)

Appendix H. Means and Standard Deviations of the Key Dimensional Constructs by Campus Units

	Overall Total		Hilo	Mānoa	West O'ahu	UHCC Subtotal	Hawai'i	Honolulu	Kapi'olani	Kaua'i	Leeward	Maui	Windward	ETC
	N	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD	$\bar{X}$ SD
Distance education training and development is available	894	2.65 (1.21)	2.37 (1.22)	2.60 (1.19)	3.49 (.85)	2.73 (1.23)	2.17 (1.05)	2.78 (1.13)	2.81 (1.28)	2.47 (1.17)	3.48 (1.14)	2.45 (1.06)	2.40 (1.26)	2.00 (1.73)
The institution values distance education	836	2.08 (1.11)	2.05 (1.06)	1.85 (1.00)	2.92 (1.21)	2.30 (1.18)	1.58 (.78)	2.50 (1.19)	2.46 (1.26)	2.25 (1.24)	2.74 (1.19)	2.08 (.93)	2.10 (1.17)	2.92 (.82)
Adoption of Innovation														
Participation in distance education is voluntary	716	3.99 (1.34)	4.07 (1.35)	3.99 (1.35)	4.09 (1.14)	3.97 (1.33)	3.47 (1.41)	4.42 (1.20)	3.90 (1.46)	3.93 (1.38)	4.33 (1.12)	3.57 (1.33)	4.38 (.72)	**
The advantages of distance education outweigh the disadvantages	667	3.18 (1.11)	3.37 (.92)	3.02 (1.11)	4.13 (.83)	3.32 (1.11)	3.09 (1.15)	3.07 (1.06)	3.10 (1.13)	3.57 (1.06)	3.80 (1.11)	3.56 (.94)	3.00 (1.12)	2.44 (.69)
Distance education is compatible with my work style	608	2.72 (1.44)	2.54 (1.43)	2.56 (1.37)	3.44 (1.42)	2.94 (1.51)	2.83 (1.51)	2.87 (1.65)	2.75 (1.47)	3.00 (1.48)	3.48 (1.61)	2.88 (1.32)	2.57 (1.44)	**
My self-image is enhanced by using technological innovations	1,772	2.17 (1.15)	2.00 (1.07)	2.15 (1.17)	2.13 (.90)	2.23 (1.14)	2.07 (1.04)	2.17 (1.20)	2.25 (1.12)	2.27 (1.13)	2.28 (1.18)	2.63 (1.16)	1.83 (1.06)	1.98 (1.07)
Distance education instruction is difficult	562	3.07 (1.15)	3.15 (.90)	2.99 (1.19)	3.03 (1.11)	3.16 (1.14)	3.41 (.95)	3.28 (1.08)	3.13 (1.24)	2.95 (.95)	3.18 (1.29)	2.97 (1.15)	3.36 (1.02)	**
I am able to share the results of using distance education with others	459	3.27 (1.26)	3.30 (1.37)	3.09 (1.28)	3.52 (1.17)	3.50 (1.20)	3.32 (1.29)	3.05 (1.13)	3.43 (1.29)	3.67 (1.06)	3.92 (.99)	3.66 (1.17)	3.05 (1.08)	**
I am able to see the results of distance educational delivery	693	2.80 (1.38)	2.87 (1.40)	2.45 (1.34)	3.86 (.81)	3.28 (1.28)	3.22 (1.07)	3.12 (1.26)	3.16 (1.33)	3.27 (1.47)	3.54 (1.17)	3.81 (1.13)	2.10 (1.39)	2.50 (2.12)
I am able to try-out distance education before deciding to use it	671	2.54 (1.28)	2.51 (1.12)	2.30 (1.25)	3.62 (1.00)	2.84 (1.30)	2.41 (1.22)	2.45 (1.03)	2.84 (1.37)	2.78 (1.28)	3.43 (1.38	3.00 (1.15)	2.61 (1.17)	2.50 (2.12