

# ABSTRACT

## SCHOOL OF SOCIAL WORK

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### FACULTY USE OF TECHNOLOGY IN

### POSTSECONDARY EDUCATION

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This study was designed to examine six questions concerning faculty use of technology in postsecondary education in relationship to faculty age, gender, academic rank, employment status, principal field of teaching, and type of institution where the faculty member is employed. The study used archival data from the National Study of Postsecondary Faculty (NSOPF:04) to describe and examine faculty use of technology in postsecondary education. The researcher analyzed archival data collected in 2004 by RTI. In 2004 34,330 eligible sample members were identified; 29,820 (87%) were contacted, and 26,110 (76%) completed the survey (NCES).

The findings of this study indicated that further research is needed in the following three areas: 1) the examination of gender and faculty use of technology in postsecondary education. 2) the relationship between faculty employment status and faculty use of technology in postsecondary education, and 3) the type of institution (2- vs. 4-Year) in which faculty work and faculty use of technology in postsecondary education.

FACULTY USE OF TECHNOLOGY IN  
POSTSECONDARY EDUCATION

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BY

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Dear God, thank you for blessing me with more than I could have ever imagined. Through your mercy I am living my dream. To my family, I pray that you are proud of what we have accomplished. Thank you for believing in Landa; in your own way, each of you has played a significant role in my development. To Shirley and Arthur; trust in the knowledge that your journeys were not in vain and that your life lessons continue to keep me grounded in my faith in God. To Dr. Richard Lyle, chairperson of my dissertation committee; Dr. Janice Liddell and Dr. Karen Mallory Waters; thank you for the time you committed to this process and for your professional mentorship. I acknowledge Dr. Narviar Calloway and Mrs. Claudette Rivers-King; your support throughout my doctoral studies was immeasurable and I am eternally grateful. I wish to also thank Mrs. June Cline for her knowledge as a statistician and amicable style. To Mr. Harry Weaver III, the Detroit Public Schools District, Indiana University; especially Dr. Gary R. Lowe; thank you for preparing me for life as well as my doctoral studies. Lastly, I thank God for my husband John McLaughlin Williams, our daughter Chase Carter Williams, my sister Wanda Yvonne Lewis Jackson and my brother Jermaine Ravon Carter. Throughout my personal and professional journeys their love and support has remained constant. I acknowledge them for the continued stability that they bring to my life. Dear God, I am humbled and grateful for the gifts and life lessons that you have bestowed upon me.

# TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS.....	ii
LIST OF TABLES.....	v
CHAPTER	
I. INTRODUCTION.....	1
Teaching with Technology.....	4
Statement of the Problem.....	7
Purpose of the Study.....	9
Research Questions.....	10
Hypotheses.....	11
Significance of the Study.....	11
Definitions.....	12
II. REVIEW OF THE LITERATURE.....	14
Technology and Postsecondary Education.....	14
Social Work Education and Technology.....	15
The Use of Technology in Social Work Education.....	15
The Demand for Technology in Social Work Education.....	17
Future Directions.....	18
Potential Factors Impacting Faculty Use of Technology in Postsecondary Education.....	19
Age and Gender.....	20
Academic Background.....	22
Employment Status.....	23
Institutional Characteristics.....	26
Social Factors.....	27
Organizational Factors.....	28
Theoretical Framework.....	31
III. METHODOLOGY.....	40
Research Design.....	40
Description of Site.....	41
Population and Sample.....	41
Instrumentation.....	42

## TABLE OF CONTENTS

(continued)

CHAPTER	PAGE
Data Analysis.....	44
Limitations of the Study.....	44
Summary.....	45
IV. PRESENTATION OF FINDINGS.....	46
Demographic Data.....	47
Research Questions and Hypotheses.....	49
Conclusion.....	78
V. CONCLUSIONS AND RECOMMENDATIONS.....	80
Conclusions.....	81
Recommendations.....	89
APPENDICES.....	91
Appendix A: Lead Letter to Faculty.....	92
Appendix B: Survey Questionnaire.....	93
REFERENCES.....	130

## LIST OF TABLES

TABLE	PAGE
1. Frequency Distributions - Demographic Variables N = 26,110.....	48
2. Crosstabulation - Number of Hours Spent Emailing Students and Faculty Age...50	
3. Crosstabulation - Satisfaction with Equipment/Facilities and Faculty Age.....51	
4. Crosstabulation - Satisfaction with Technology-based Activities and Faculty Age.....52	
5. Crosstabulation - Technology Index and Faculty Age.....53	
6. Crosstabulation - Website for Instructional Duties and Faculty Age.....53	
7. Crosstabulation - Number of Hours Spent Emailing Students and Gender.....55	
8. Crosstabulation - Satisfaction with Equipment/Facilities and Gender.....56	
9. Crosstabulation - Satisfaction with Technology-Based Activities and Gender.....56	
10. Crosstabulation - Technology Index and Gender.....57	
11. Crosstabulation - Use of Websites for Instructional Duties and Gender.....58	
12. Crosstabulation - Number of Hours Spent Emailing Students and Academic Rank.....59	
13. Crosstabulation - Satisfaction with Facilities/Equipment and Academic Rank.....60	
14. Crosstabulation - Satisfaction with Technology-Based Activities and Academic Rank.....61	
15. Crosstabulation - Technology Index and Academic Rank.....62	
16. Crosstabulation - Website for Any Instructional Duties and Academic Rank.....63	

## LIST OF TABLES

(continued)

TABLE	PAGE
17. Crosstabulation - Number of Hours Spent Emailing Students and Employment Status.....	64
18. Crosstabulation - Satisfaction with Facilities/Equipment and Employment Status.....	65
19. Crosstabulation - Satisfaction with Technology-related Activities and Employment Status.....	66
20. Crosstabulation - Technology Index and Employment Status.....	67
21. Crosstabulation - Use of Websites for Instructional Duties and Employment Status.....	68
22. Crosstabulation - Number of Hours Spent Emailing Students and Principal Field of Teaching, Vocational Included.....	69
23. Crosstabulation - Satisfaction with Equipment/Facilities and Principal Field of Teaching, Vocational Included.....	70
24. Crosstabulation - Satisfaction with Technology-Related Activities and Principal Field of Teaching, Vocational Included.....	71
25. Crosstabulation - Satisfaction with Technology Index and Principal Field of Teaching, Vocational Included.....	72
26. Crosstabulation - Satisfaction with Use of Website for any Instructional Duties and Principal Field of Teaching, Vocational Included.....	73
27. Crosstabulation - Number of Hours Spent Emailing Students and Type of Institution.....	74



LIST OF TABLES

(continued)

TABLE	PAGE
28. Crosstabulation - Satisfaction with Equipment/Facilities and Type of Institution.....	75
29. Crosstabulation - Satisfaction with Technology-Related Activities and Type of Institution.....	76
30. Crosstabulation - Technology Index and Type of Institution.....	77
31. Crosstabulation - Use of Websites for Any Instructional Duties and Type of Institution.....	78

## CHAPTER I

### INTRODUCTION

The Carnegie Commission on Higher Education [The Commission] in 1972 wrote, “By the year 2000 it now appears that a significant proportion of higher education courses may be taught with some form of information technology (IT)—perhaps in a range of 10 to 20 percent” (p. 1). The year 2000 has come and gone; and this observation published in a widely circulated report entitled *The Fourth Revolution: Instructional Technology in Higher Education*, now seems remarkably clairvoyant. The report further anticipated that new technologies “may provide the greatest single opportunity for academic change on and off campus” (p. 1) and that off-campus instruction “may become both the most rapidly expanding and the most rapidly changing segment of postsecondary education” (p. 4). Ironically, through the 1980s, these predictions appeared to have little chance for realization (Albright & Nworie, 2007).

The Commission felt that the technologies with the greatest promise were cable television, videocassettes, self-instruction stations in carrels, and computer-assisted instruction, then consisting largely of drill-and-practice and tutorial materials accessed by students from minicomputers tethered to mainframes. Although videotapes certainly became ubiquitous classroom tools, none of these technologies, even collectively, remotely achieved the impact the Commission foresaw. The success of academic

technologies at the end of the 20th century was largely attributed to two technologies unknown in 1972: the personal computer (PC) and the Internet. The PC and the Internet are at the heart of a remarkable transformation in higher education, not only in teaching and learning but in technology support infrastructure as well (Albright & Nworie, 2007).

A timeline chart plotting technological changes in the world shows that most change occurred in the 20th century. In that century alone, mankind moved from the horse-and-buggy to space travel; witnessed the invention of the gas engine, electricity, and the computer; and became a world community of interdependent global villages. However, teaching methods have not changed at the same warp speed. In fact, higher education entered the new millennium using many of the same teaching methods that were used centuries ago (Howard, 2006).

One of these teaching methods is Socrates' dialectic process. Strolling through the agora of 5th-century Athens, Socrates sought universal definitions and truths. Pursuing his quest, he employed a dialectic process. In posing questions to student responses, he proceeded from proposal to counterproposal, from less adequate to more adequate definitions in the effort to discover a universal concept. This process of probing conversation became known as the Socratic teaching method (Howard, 2006).

The Socratic teaching method has impacted thinkers and instructors—from Hegel, who moved through the negation to the negation of the negation; to Marx, who viewed history through dialectical materialism; to C. C. Langdell, who introduced case law as an innovative method to study law as a science; to present-day professors who use this method to compel students to distinguish the *ratio decidendi* (rule of law) from *obiter dicta* (incidental comments) and defend their reasoning. As with Socrates, there is no

single path in the development of ideas; the process is what is critical. In many disciplines today, the Socratic method of instruction continues to be a dominant method for developing critical thinking skills (Howard, 2006).

But the milieu for education has changed. Today educators are faced with trying to achieve age-old processes in a new, dramatically different environment: Students use technology instead of contemplative reasoning alone. In fact, their world is technology, and they use it to play, shop, bank, conduct research, and converse. Their world is permeated with lights, sounds, and fast action. No longer do they engage a comrade in checkers in the agora; now they scour virtual battlefields, challenging cunning adversaries in 3-D graphics (Howard, 2006).

For these reasons, D'Angelo and Woosley (2007) suggested that professors who employ various methods of teaching such as PowerPoint, video segments, and overhead projectors during one course lecture are better able to keep students' attention, thereby reducing boredom with the lecture and, consequently, improving the overall learning experience. There are also those who suggest that technology enhances students' learning by adding variety to the delivery of course material. Others suggest that the visual component of technology, such as PowerPoint, lends itself to even greater value for those students whose learning is improved through the use of visual aids. Angelo and Woosley also concluded that students themselves maintain the perception that modern teaching methods (PowerPoint, videos/programs) provide structure and clarification of material and are effective in increasing how they process and learn information.

Faced with contemporary students accustomed to technology, educators are challenged to employ current technologies to introduce classical approaches. Transition

to a new millennium does not imply that the Socratic method must be discarded; however, it does suggest adaptations must be made. Such adaptations may include changes in course design, student assessment, and the use of computer-based technologies such as electronic chalkboards. Thus, for the academy, the question is not whether to use technology; the question is how to use it to support pedagogy (Howard, 2006).

### Teaching with Technology

Despite research and testimony that technology is being used by more faculty, the diffusion of technological innovations for teaching and learning has not been widespread, nor has IT become deeply integrated into the curriculum. Although there is a growing number of faculty who are very enthusiastic about adopting technology because of the potential of newer tools for their students, there is still a large number of faculty who seem hesitant or reluctant to adopt technology for their teaching tasks. Given the size of investment in instructional technology in higher education, the increased demand for distance education in the future, and the demonstrated effectiveness with some educational outcomes, it seems reasonable to investigate why the integration of technology for teaching and learning is so appealing to some faculty and not to others (Mehra & Mital, 2007). This question spawned the current study, which examined faculty use of technology and if a relationship existed between faculty use of technology and the age, gender, academic rank, employment status, principal field of teaching, and type of institution where the faculty member was employed.

Today, colleges and universities invest billions of dollars per year for the acquisition of computer technology (Geoghegan, 1994). Instructional technology may support and increase the efficiency of the teaching–learning transaction or even modify educational processes, especially with regards to distance education and anytime/anywhere access (Daniel, 1997). Formal evidence linking this investment to higher productivity (Schwalbe, 1996) and changes and improvements in the teaching and learning process is accumulating (Ehrmann, 1995; Kulik & Kulik, 1980, 1987); new research approaches and methodologies are being developed to adequately study the unique issues involved in educational technology (Bull, et al., 1994; Clark, 1989; Reigeluth, 1989). In some cases, integrating technology into the teaching–learning transaction has been found to transform the teacher’s role from being the traditional “sage on the stage” to being a “guide on the side,” and student roles also change from being passive receivers of content to being more active participants and partners in the learning process (Alley, 1996; Mehra & Mital, 2007; Repp, 1996; Roblyer, Edwards, & Havriluk, 1997). But if faculty do not use technology in the classroom, it could then be viewed as an unnecessary institutional expenditure and not as a tool to enhance the teaching and learning process.

Faculty members certainly play a significant but unique role in deciding if technology will be used in the classroom (Bennett et al., 1999; Milheim, 2001). Today, instructors can use lecture-enriching technology and video conferencing to bring guest lecturers from distant places into the classroom. Instructors also can facilitate student learning through computer-based technologies such as electronic mail, Web pages, chat rooms, and electronic bulletin boards (Sahin & Thompson, 2007).

Methods of delivering course material have also changed; textbooks offering pedagogical resources, such as PowerPoint slides and videos, are often attractive to professors given time constraints and the pressure to publish (Neal, 1998). For example, Withrow, Weible, and Bonnett (as cited in D'Angelo & Woosley, 2007) found that the overwhelming majority of introductory textbooks in criminal justice courses offer teaching and pedagogical support such as test banks, electronic lecture outlines, and audio and/or visual teaching materials (e.g., overhead transparencies, videos, and presentation slides).

Classroom activities that were formerly accomplished by face-to-face instruction can now be performed with a variety of different technological media and visual presentation technologies (e.g., ELMO, VIZCAM), the electronic chalkboard, wireless laptop computers, TV/video, and interactive CD-ROMs (Benekos, Merlo, & Cook, 1998). These high-tech tools can be used to replace, modify, and/or supplement traditional teaching mechanisms (Fulford & Ho, 2002; Smith, 1997), and are viewed by many as “an inseparable part of good teaching” (Pierson, 2001, p. 414). But the final decision to integrate these instructional tools into the classroom does not rest with the institution but with each individual faculty member.

The integration of technology in the classroom also highlights the added burden on faculty to identify multiple ways of assessing students' performance. No longer are students being assessed purely with paper-and-pencil tests (e.g., multiple-choice, true/false, matching exercises); alternative assessment activities are being used more frequently in these classroom environments. For example, students are required to complete research projects, from which they are expected to produce papers or oral

and/or multimedia presentations. Portfolios are being used to help students assess their own growth as they engage in self-assessment activities. Rubrics are provided to help the students understand what is expected of them as they write their papers or create their presentations or portfolios, and quizzes are often used to help students reinforce the material they have been learning (Duhaney, 2005).

Faculty members have a wide range of technology they can use to better, and in some cases replace, traditional teaching and student assessment methods. Although all of these technological options exist (Peluchette & Rust, 2005), an analysis of the factors that affect a product's adoption can play an important role in increasing the utilization of that product (Sahin & Thompson, 2007). In other words, technology-based instructional and student assessment methods appear to be prevalent, but what factors impact faculty use of this technology in postsecondary education?

#### Statement of the Problem

Farquhar and Surry (as cited in Sahin & Thompson, 2007) stated that analyzing the factors that shape a product's adoption can provide valuable information to increase the use of the product. Thus, learning about the factors that could affect faculty members' level of instructional technology use might increase faculty use of technology in higher education as well as the creation of strategies to address factors that may impede use. Moreover, Braak and Hoerup (as cited in Sahin & Thompson, 2007) also have argued that researchers are still uncertain about the factors regarding use, so there is a need to investigate these factors.



Conhaim (2003) suggested that both students and faculty have recently become curious and excited about alternative means and methods for taking courses for college credit. The traditional in-class instruction format for teaching college courses is seen as only one method by which students can learn and receive credit hours. As class size and tuition costs increase for on-campus classes at public universities and as the student body population becomes more diverse, the demand for alternative course delivery methods is rising sharply (Brewer, 2004).

Social work educators have not been among early adopters of Internet-mediated courses; a search of the literature found very few peer-reviewed articles about this topic prior to 2000 (Siebert, Siebert, & Spauldin-Givings, 2006). Just 30 years ago, the MSW degree and social work practice experience were considered sufficient preparation to teach social work at the graduate level. This is no longer the case. As faculty members without doctorates retire from academic positions, schools of social work replace them with doctoral graduates who do not possess the instructional technology expertise that is expected by today's student. This presents an additional challenge to professional and social work doctoral programs to ensure that graduates are adequately prepared for research, teaching, and service (Valentine, et al., as cited in Ngabung, 2001).

Online education is the new frontier for schools of social work. It requires technological expertise, flexibility, and instructor creativity (Siebert, et al., 2006). Dusick, Reznich, and Spotts' research (as cited in Peluchette & Rust, 2005) concluded that for faculty members to use technology, they must be comfortable with it and see it as a convenient and beneficial tool. Grasha and Yangarber-Hicks (as cited in Peluchette & Rust) shared their sentiment and added that an instructor's own feelings of competence

are important. Schools have always prepared doctoral students for employment in postsecondary educational institutions, but one aspect of each student's preparation must be faculty use of technology. It is no longer a question of whether technology should be used, but rather in how many ways technology can be used in all processes of education (Ngabung, 2001).

### Purpose of the Study

Although faculty members have a range of technology at their disposal, little is known about the factors that may influence or limit their use of technology (i.e., age, gender, academic rank, employment status, principal field of teaching, and type of institution where a faculty member is employed). Instead, researchers have tended to focus on faculty perceptions of particular instructional technologies (Peluchette & Rust, 2005).

The purpose of this study was to examine archival data from the National Study of Postsecondary Faculty (NSOPF:04). The NSOPF:04, conducted by Research Triangle International (RTI) and sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES), is a nationally representative study that collects data regarding the characteristics, workload, and career paths of full- and part-time postsecondary faculty and instructional staff at public and private not-for-profit 2- and 4-year institutions in the United States. Conducted previously in 1988, 1993, and 1999, it serves as a continuing response to a need for data on faculty and instructional staff (NCES, 2006).

The researcher examined archival data that was collected in 2004 by RTI. In 2004 34,330 eligible sample members were identified; 29,820 (87%) were contacted, and 26,110 (76%) completed the survey (NCES). The researcher used this data to examine faculty use of technology in postsecondary institutions in the United States. This researcher strongly believes that this study will facilitate an understanding of the factors that may influence faculty use of technology in postsecondary education, and subsequently lead to further research focusing on social work faculty and the identification of potential factors that may influence their use of technology.

#### Research Questions

1. Is there a relationship between faculty age and faculty use of technology in postsecondary education?
2. Is there a relationship between faculty gender and faculty use of technology in postsecondary education?
3. Is there a relationship between faculty academic rank and faculty use of technology in postsecondary education?
4. Is there a relationship between faculty employment status and faculty use of technology in postsecondary education?
5. Is there a relationship between faculty principal field of teaching and faculty use of technology in postsecondary education?
6. Is there a relationship between the type of institution where a faculty member is employed and faculty use of technology in postsecondary education?

### Hypotheses

1. There is no statistically significant relationship between faculty age and faculty use of technology in postsecondary education.
2. There is no statistically significant relationship between faculty gender and faculty use of technology in postsecondary education.
3. There is no statistically significant relationship between faculty academic rank and faculty use of technology in postsecondary education.
4. There is no statistically significant relationship between faculty employment status and faculty use of technology in postsecondary education.
5. There is no statistically significant relationship between faculty principal field of teaching and faculty use of technology in postsecondary education.
6. There is no statistically significant relationship between the type of institution where a faculty member is employed and faculty use of technology in postsecondary education.

One dependent variable was selected for this study. The dependent variable is faculty use of technology. The independent variables are faculty age, gender, academic rank, employment status, principal field of teaching, and type of institution.

### Significance of the Study

During the past 3 decades, innovations in information technology have had profound effects on U.S. colleges and universities. For instance, information technology has streamlined administrative processes, enhanced institutional marketing platforms, expanded student enrollment options, and increased the methods of course delivery. Not

surprising is that the increasing integration of technology into the educational core of colleges and universities has resulted in numerous implications for those operating within such institutions (Mars & Ginter, 2007). In light of these advances, faculty use of information technology has not increased and there is little empirical evidence regarding the factors that may influence or limit faculty use of technology (Peluchette & Rust, 2005).

This study is important because it will provide relevant research for faculty development professionals, higher education administrators, and doctoral student educators who play diverse roles in supporting experienced and next-generation faculty as they integrate technology into their classrooms in response to the powerful expectations of students, parents, and the workplace (Hyatt, 2003).

This dissertation is divided into five chapters. Chapter one serves as an introduction to the research. Chapter two is a review of the literature related to technology and postsecondary education, social work education and technology, potential factors impacting faculty use of technology in postsecondary education and an applicable theoretical framework. Chapter three presents the methods of the study. Chapter four is a presentation of the findings. Lastly, Chapter five presents the conclusion and implication of the study.

### Definitions

*National Study of Postsecondary Faculty (NSOPF:04)*. The NSOPF:04, conducted by RTI and sponsored by the NCES, is a nationally representative study that collects data regarding the characteristics, workload, and career paths of full- and

part-time postsecondary faculty and instructional staff at public and private not-for-profit 2- and 4-year institutions in the United States. Conducted previously in 1988, 1993, and 1999, it serves as a continuing response to a need for data on faculty and instructional staff (NCES, 2006). The researcher examined archival data that was collected in 2004 by RTI. In 2004, 34,330 eligible sample members were identified; 29,820 (87%) were contacted, and 26,110 (76%) completed the survey (NCES).

*Postsecondary education.* The provision of a formal instructional program whose curriculum is designed primarily for students who are beyond the compulsory age for high school. This includes programs whose purpose is academic, vocational, and continuing professional education, and excludes vocational and adult basic education programs (“The Integrated Postsecondary Education System Glossary,” 2008).

*Technology.* Technology in education is commonly defined as a technical device or tool used to enhance instruction. According to Lever-Duffy, McDonald, and Mizell (2005), “educational technology might include email, media, models, website use, projected and non-projected visual, as well as audio, video and digital media (Okojie, Olinzock, & okojie-Boulder, 2006).

## CHAPTER II

### REVIEW OF THE LITERATURE

This chapter is a review of the literature on faculty use of technology in postsecondary education, and lays a scholarly foundation to support the need for this research.

#### Technology and Postsecondary Education

In an effort to keep pace with technology, universities continue to invest considerable resources into current technologies that are thought to enhance the teaching and learning experiences of faculty and students. These resources include investments in hardware, software, and supporting infrastructures. They also include sizable expenditures for staff and teaching materials to meet training and performance support needs. But despite sizable investments in hardware, software, and supporting infrastructures, little is known about faculty use of technology in postsecondary education (Brill & Galloway, 2007). In fact, “if higher education wants to survive in the expansion of technology, then it must be prepared and must prepare its faculty to implement the new technologies within their classrooms” (Hagenson, as cited in Sahin & Thompson, 2007, p. 168). In order to do this, there is a need for deeper understanding of factors predicting faculty adoption of technology (Sahin & Thompson).

## Social Work Education and Technology

### The Use of Technology in Social Work Education

Like the rest of higher education, social work education has seen a trend of increasing use of technology and online learning in the delivery of social work courses and programs, particularly in the last decade (Harris & Parrish, 2006; Ouellette, Westhius, Marshall, & Chang, 2006). Ayala (2009) notes that courses in undergraduate and graduate social work education are increasingly being developed and implemented partly or fully online for a wide range of courses. These include: research (Frey & Faul, 2005; Hisle-Gorman & Zuravin, 2006), generalist social work practice (Ouellette, et al., 2006; Petracchi, Mallinger, Engel, Rishel, & Washburn, 2005), social work history (Faux & Black-Hughes, 2000), field education (Birkenmaier et al., 2005; Maidment, 2006), gerontology (Sidell, 2006), diversity (Hylton, 2006), social policy (Roberts-DeGennaro & Clapp, 2005), child welfare (Bellefeuille, 2006; Rice-Green & Dumbrill, 2005), addictions (Harris & Parrish, 2006), administration (Freddolino & Knaggs, 2005), crisis intervention (Siebert, Siebert, & Spaulding-Givens, 2006), mental health (Knowles, 2001), and ethics (Biggerstaff, 2005).

Despite their recent growth, the use of technology and online learning in social work is not without controversy. Supporters argue that in order to thrive in an increasingly technological society, social work must take the lead in developing new models of practice and education that incorporate technology while still promoting its mission and values (e.g., Cummins & Hamilton, 2000; Harris & Parrish, 2006). On the other hand, skeptics cite various concerns about the use of technology in social work practice and education, such as minimizing the importance of meaningful human



interaction and increasing student isolation (e.g., Collins, Gabor, Coleman, & Ing, 2002). According to Ayala (2009), some literature, in particular, has cited a prevailing professional doubt as to whether social work practice skills can be effectively taught via technology and the Internet (Ouellette, et al., 2006; Petracchi, et al., 2005; Siebert, et al., 2006).

Perhaps as a result of this debate about the use of technology in social work, the profession has been a late adopter of online learning. Hansen, Resnick, & Galea (2002) noted that social work education has lagged far behind other disciplines in exploring the use of computers for educational purposes. Siebert, et al. (2006) added that social work educators have been slow to adopt Internet-based instruction and that social work literature and research in this area prior to the year 2000 is scarce (Ayala, 2009).

Moore's study (as cited in Regan & Youn, 2008) on faculty perceptions of Web-based learning environments in social work suggests that the debate regarding the use of technology in social work education continues to exist today (Moore, 2005a). From a snowball sampling method, 174 faculty were identified "as having expertise in Web-based instruction" and were invited to participate in the study (Moore, 2005a, p. 57). Eighty-one faculty agreed to participate in the study. Moore found that most social work distance education courses have integrated computer technology by using some form of Web-enhanced instruction, and some were offered totally in a Web-based learning environment.

Moore (2005b) also found resistance and evidence to indicate that social work educators perceive Web-based learning environments to be less effective than face-to-face instruction, particularly in the area of practice courses and clinical skills

education. Two of the major reasons that social work faculty consider Web-based learning environments to be inferior to face-to-face learning environments are the fears of being unable to teach practice skills online and being unable to socialize students to the profession in a Web-based learning environment. With a focus on human interaction and hands-on teaching of practice skills in social work education, skills-based clinical courses can seem incompatible with Web-based learning environments.

#### The Demand for Technology in Social Work Education

Kalke stated (as cited in Padgett & Conceicao-Runlee, 2000) that despite the concerns expressed by faculty, the demand for increased integration of technology has emanated from social work students and higher education. As students become more familiar with technology they may begin to expect online access to syllabi, lecture notes and reading materials. Also, faculty maybe expected by their postsecondary institution to be more responsive to the diverse learning styles of students by infusing technology in and outside of the classroom.

The demand for technological literacy from students and postsecondary institutions requires that social work faculty be technologically competent to respond to this demand. While for some individuals, and in certain situations, the demand for technological literacy may be very compelling, for other individuals and in other situations this demand may not be sufficiently compelling to motivate learning. Social Work faculty may be willing to invest time in retooling, but due to other institutional obligations be unable to offer such a time commitment. It is important to remember that faculty investment can be influenced by both individual motivation and institutional

demands on participants' time. Addressing motivational issues will be critical to social work faculty's motivation to use technology (Padgett & Conceicao-Runlee, 2000).

### Future Directions

Kreuger and Stretch concluded that more research focusing on technology in social work education should be conducted (Kreuger & Stretch, 2000). Sandell and Hayes (2002) agreed with these findings and went on to add that one way that social work programs can add value in this area is to hire new faculty who are both highly skilled in using technology and are able to assist faculty and students in becoming more competent in this area. Also, university teaching centers or their equivalents can assist faculty in learning how to integrate technology into their courses and research. Finally, there are national conferences on technology and social work for those who want to learn more about the cutting-edge applications of technology in the field.

Social work is ultimately about providing services to clients. In social work education, students are the consumers of our services. Through our teaching on the core values, skills, and knowledge of the profession, we seek to help our students develop their abilities to provide excellent services to clients. What we teach in this regard does not need to change. However, we must acknowledge that our teaching and learning environments are being driven to change by the influences of technology, and that this will continue to be a factor that shapes the future direction of social work education (Sandell & Hayes, 2002).

### Potential Factors Impacting Faculty Use of Technology in Postsecondary Education

In 2001, Ngabung conducted a study entitled *Faculty Orientation to Instruction and Use of Technology in Post-Secondary Education in the United States*. The study hypothesized the predictor variables within the broad categories of personal characteristics, background and experience, institutional and disciplinary factors, employment status, support and incentives, and workload. It was found that faculty orientation to instruction and their use of technology were affected. The study utilized a large secondary data set consisting of 25,780 cases of postsecondary faculty from the National Survey of Post-Secondary Faculty sponsored by the NCES (Ngabung).

Ngabung's (2001) study concluded the following three points: (a) female faculty were more likely than male faculty to employ the student-centered approach to teaching and to use technology; (b) faculty associated with private institutions and liberal arts colleges were more likely than those at comprehensive institutions to adopt the student-centered approach to instruction; and (c) faculty associated with business, engineering, health sciences, and natural sciences were less likely than humanities faculty to adopt the student-centered approach but were more likely to use technology in their instruction.

In 2007, Roberts, Kelley, Meldin, and Walker conducted a study entitled *Factors Influencing Accounting Faculty Members' Decision to Adopt Technology in the Classroom*. The study hypothesized the predictor variables within the broad categories of social factors, organizational factors, and individual factors. The researchers tested the following subgroups for association: (a) tenure and non-tenure, (b) assistants compared with associates and full professors, (c) faculty-at-large and small schools, (d) faculty in

large and small departments, and (e) new faculty compared with experienced faculty. The analyses found a positive association between the two sets of rankings for each of the aforementioned subgroups, indicating an overall agreement in the ranking of the factors impacting the decision to adopt technology (Roberts, et al., 2007).

What factors may influence faculty use of technology? In Ngabung's (2001) study, he suggested that among the many possible factors are such broad categories as personal characteristics, academic or professional background and experience, institutional and disciplinary factors, employment status, support and incentives, and workload. Roberts et al. (2007) hypothesized the predictor variables within the broad categories of social factors, organizational factors, and individual factors. For the purposes of the current study, the researcher focused on age, gender, academic background, employment status, and institutional characteristics as predictors of faculty use of technology.

### Age and Gender

In terms of age, Cross (as cited in Ngabung, 2001) concluded that faculty members over the age of 56 were less interested in teaching with technology and are more interested in values such as the development of academic honesty, respect for others, and a lifelong love of learning. Faculty below the age of 36, however, were more likely to adopt reform ideas such as the use and integration of technology in the instructional process as well as methods that demonstrate creativity, promote problem-solving skills, and active student-centered teaching/learning.

Rosseau and Rogers (as cited in Statham, Richardson, & Cook, 1994) also had similar findings. The researchers found that a faculty member's age may influence technology use. In Rosseau and Rogers' study, older faculty members used fewer technology applications and senior faculty members who were tenured appeared to be less motivated to learn new technologies.

In terms of gender, Statham, et al. (1994) hypothesized that "women might be more likely than men to use participatory learning in their classrooms if they are more concerned about establishing interpersonal relationships and enhancing their students sense of agency" (p. 411). Earlier studies on female secondary teachers support this proposition (Brophy & Good, 1974; Good, et al., 1973), and this difference may carry over to college-level faculty (Thome, 1979). Statham et al. concluded that while gender differences may not be great, as indicated by data they compiled, nevertheless, "women professors will emphasize the importance of teaching more than men, will invest more effort in involving students and will achieve higher levels of interaction with their students" (as cited in Ngabung, 2001, p. 414). These findings suggest that there are gender differences in faculty use of technology, which was a component examined by the current study.

Spotts' (1997) research also revealed that there may be gender differences in the way faculty members use technology and rate their levels of knowledge or expertise. For example, in Spotts, Bowman, and Mertz's study of 367 faculty members at a medium-sized institution, men rated their knowledge of and expertise with technology higher than women did, but both genders had similar frequencies of technology use. Campbell and Varnhagen (as cited in Peluchette & Rust, 2005) found that women faculty

members, because of their tendency to explore more relational approaches to teaching, used educational technologies for purposes different from those of their male colleagues. Thus, gender differences in both perception and use of technology are worth further investigation.

Peluchette and Rust's (2005) study also revealed some interesting gender differences. Compared with the women, the men in their sample showed a stronger preference for the use of no technology in the classroom. Does this finding indicate that they are less comfortable with using technology or do not see it as appropriate for the courses they are teaching? Perceptions of students' learning needs appeared to play a larger role in influencing use of instructional technology among the female faculty members. Could women faculty members be more perceptive of student learning needs and place greater weight on this factor in their use of technology? These issues indeed warrant further investigation (Peluchette & Rust).

#### Academic Background

Cross (as cited in Ngabung, 2001) observed that in higher education, most studies on teacher effectiveness talk about generic behaviors (qualities that make for good teaching generally), but they do not take into account differences in fields of study. Cross (as cited in Ngabung) suggested that differences exist in the nature of teaching that occurs in the various fields; for example, a good physics teacher may not behave in the same way as a good English teacher.

In the same respect, course subject may potentially influence faculty technology use. Peluchette and Rust's (2005) research supported the concept that course subject may



influence faculty use of technology. The researchers concluded that decisions on what types of technology to use for a particular course are likely to be influenced by course subject and the instructor's learning objectives.

Zayim, Yildirim, and Saka's (2006) study, *Technology Adoption of Medical Faculty in Teaching: Differencing Factors in Adopter Categories*, explored the differences between faculty members who have adopted new technology and those reluctant or resistant to IT adoption. The data analysis was based on Rogers' theories of diffusion and adopter categories. Significant differences were found between early adopters and the mainstream faculty in terms of individual characteristics, adoption patterns, perceptions of barriers, and technology learning preferences. The results indicated that computer use, self-efficacy, and rank significantly contributed to the prediction of faculty adopter group (Zayim et al.). The current study examined academic background/training to determine whether a relationship exists between academic background and faculty use of technology.

#### Employment Status

Harper, Baldwin, Gansneder, and Chronister's (2001) research portrayed the plight of female faculty and showed how rank and full-time/part-time status relate to teaching. Indirectly, the study revealed that employment status together with gender differences may have an influence on faculty orientation to instruction. Study participants whose appointments were oriented largely to instruction potentially showed a greater interest in student-oriented approaches. The researchers hypothesized that non-tenure-track faculty and part-time faculty are more likely to have time to reflect



on teaching because of their choice to teach rather than conducting research. It seems this aspect, like other aspects of the study, has interrelationships with other issues that result in complex situations that may not be easy to isolate (Ngabung, 2001).

Statham, et al. (1994) acknowledged these concerns and from their research observed that dedication to teaching is associated with gender and with rank. They also concluded that as rank increases, dedication decreases, and the decrease is more rapid for men than for women (as cited in Ngabung, 2001).

One of the most comprehensive research studies on this topic was published in 2002 by Warburton, Chen, and Bradburn (2002). *Teaching with Technology: Use of Telecommunications Technology by Post-Secondary Faculty and Staff* was conducted in 1998. Their study examined full- and part-time faculty and staff access to and use of e-mail and the Internet. Findings were based on a nationally representative sample of full- and part-time instructional faculty and staff who taught one or more classes for credit in the Fall of 1998 (Warburton, et al.). The authors concluded that Internet access and the quality of computing resources were important factors in the use of telecommunications technologies. Full-time postsecondary instructional faculty and staff who had access to the Internet both at home and at work were significantly more likely to use e-mail and course-specific Web sites than part-time employees who only had access at home. Clearly, the amount of Internet access was a main indicator of use for both e-mail and course-specific Web sites, and it remained important after controlling for other variables (Warburton, et al.).

While the overall findings in this report indicated increasing integration of telecommunications technologies in postsecondary settings, the study showed wide

differences between full- and part-time faculty regarding access to and use of telecommunications technologies. Without exception, full-time faculty reported more access to the Internet and more use of e-mail and course-specific Web sites than did part-time faculty (Warburton, et al., 2002).

Senjo, Haas, and Bouley's (2007) study sought to determine the factors most predictive of technology use among a statewide sample of social science faculty from colleges and universities in the state of California. The study assessed the role of various demographic and employment characteristics of faculty members, including their department type, institution level, years of higher education experience, employment status, ratings of effectiveness, and other demographic characteristics on the dependent variable of classroom-based technology use (Senjo et al.). The researchers found a significant difference in technology use depending on the number of years a faculty member had taught in higher education. The researchers' results concluded that faculty members with fewer than 10 years of higher education experience were significantly more likely to incorporate technology into their courses compared to their older, more experienced counterparts (Senjo, et al.).

Senjo, et al.'s (2007) research also concluded that employment status was significantly related to technology use and that full-time faculty members were more likely than their part-time counterparts to use technology in their classrooms. This research also assessed the impact of faculty ratings of effectiveness on the use of technology-based methods of classroom instruction (Senjo, et al.). Senjo, et al.'s findings also indicated that in addition to employment status and years of teaching experience in higher education, faculty members' ratings of effectiveness were a strong predictor of

technology use. These findings highlight the importance of demonstrating how technology can be an effective tool for achieving the goals and objectives of the classroom, particularly for full-time faculty members (Senjo, et al.).

### Institutional Characteristics

Institutional characteristics such as type of institution (for example, a research university versus a liberal arts college) may dictate the instructional orientation of faculty as well as their propensity to use technology. According to Serow, Brawner, and Demery (1999):

No sector within higher education has been more closely linked to the movement away from teaching than the research universities—i.e., the 125 institutions that award large numbers of doctoral degrees and that receive the heaviest volume of external research support (p. 412; see also Carnegie Foundation, 1994).

This highlights the potential for institutional influence on faculty orientation to instruction, suggesting less concern for teaching among faculty in research and doctoral institutions, and greater familiarity with and perhaps application of current trends in teaching among faculty at comprehensive, 2-year, and liberal arts colleges (Ngabung, 2001).

This overview highlighted some of the potential factors that may influence faculty use of technology. In Ngabung's 2001 study, he suggested that among the many possible factors are such broad categories as age, gender, academic or professional background and experience, institutional and disciplinary factors, employment status, support,

incentives, and workload. Roberts et al. (2007) hypothesized the predictor variables within the broad categories of social factors, organizational factors, and individual factors. For purposes of the current study, this researcher focused on the following: personal characteristics, academic background, employment status, and institutional characteristics. The succeeding paragraphs provide a review of relevant studies regarding Roberts et al.'s social and organizational factors and how they may potentially impact faculty use of technology in postsecondary education.

### Social Factors

Research indicates that information technology adoption and use are subject to social influence. Peers' attitudes, behaviors, and friendship networks have been found to influence diffusion of products including technology use (Fulk, Schmitz, & Steinfield, 1990; Hall & Elliot, 2003; Jacobsen, 1998; Rogers, 1983). Research affirms that technology perceptions are in part "subjectively and socially constructed" (Fulk, et al., as cited in Roberts, 2007, p. 2). Armstrong (1996) identified the need for a champion to help motivate the use of technology by others and a colleague-sharing environment as assisting the adoption by others. These findings suggest that faculty prefer to learn about technology from people they know and to whom they have immediate access (Roberts, et al.).

Dusick, Reznich, and Spotts' research (as cited in Peluchette & Rust, 2005) concluded that for faculty members to use technology, they must be comfortable with it and see it as a convenient and beneficial tool. Grasha and Yangarber-Hicks (as cited in Peluchette & Rust) shared their sentiments and added that an instructor's own feelings of

competence, as well as his or her perception of student preferences in technology use, may influence the decision on what type of technology should be used in the classroom. Several studies have examined the prediction factors related to faculty use of technology in general. The predictive ability of diffusion factors on the acceptance of Web technology was examined in a study on faculty use of technology (Surendra, 2001). Surendra found access, training, and community support as the crucial diffusion factors.

### Organizational Factors

Research has discovered a number of organizational factors affecting the decision to adopt educational technology. According to Rogers (1995), adoption of electronic technologies by faculty is contingent upon the administration of the institution providing the necessary infrastructure. While size is often found to affect adoption, it may be that larger organizations tend to be more innovative and have the necessary physical resources to support such adoption (Brace & Roberts; Kelly; Rogers; all as cited in Roberts et al., 2007).

Studies indicate that faculty have given the following reasons for not using technology for teaching: (a) lack of clear institutional policies, (b) lack of leadership from administrators, (c) limited availability of equipment, (d) lack of incentives, (e) lack of specific outcome and performance measures for curriculum related to technology-based teaching, (f) established institutional norms relating to faculty autonomy and notions of productivity, (g) lack of support by faculty and peers, (h) lack of technical support, and (i) lack of regard for this kind of work for promotion and tenure (Armstrong, 1996; Hall & Elliott, 2003; Massey & Zemsky, 1995; Ricard, 1999;

Spodark, 2003; Wolcott, 2003). Similarly, a large percentage of faculty responding to the 2000 National Learning Infrastructure Initiative's Best Practices in Faculty Engagement and Support survey indicated they hesitate to take on technology projects without clear signs that their work is a desired activity, that it will be well-supported, and that it will be adequately rewarded (as cited in Spodark).

Boose's (2001) and Spotts' (1999) research concluded that level of institutional support can play a key role in the use of technology; in some instances, faculty members may wish to use certain forms of instructional technology (e.g., multimedia support in the classroom), but their institutions do not have sufficient resources to meet their needs.

Related to institutional support is the issue of technical support. Faculty members indicate that technical problems such as slow systems and software or server problems are important factors in determining their use of technology (Peluchette & Rust, 2005). Papo's study (as cited in Peluchette & Rust, 2005) suggested that faculty frustration with slow equipment delivery, equipment set-up time, and limited funding for technology upgrades can foster a reluctance to use instructional media. Bocchi, Eastman, and Swift (as cited in Peluchette & Rust) concluded that in other situations, faculty members may feel pressured by their institutions to use certain technologies (e.g., interactive television delivery or Internet-based instruction) and may have mixed feelings about whether they have received adequate training and whether such technologies are appropriate.

Brill and Galloway's 2007 study, *Perils and Promises: University Instructors' Integration of Technology in Classroom-Based Practices*, investigated college-level instructors' use of and attitudes toward classroom-based teaching technologies. The results represented instructors from a variety of disciplines including foreign language;

natural, applied, and social sciences; math and computer science; history; fine arts; and business. In general, participants identified the following two issues as the most significant barriers to effective use of technology in the classroom: (a) poor classroom environments; and (b) a lack of or limited availability of equipment, even basic equipment such as overhead projectors (Brill & Galloway).

Bocchi (as cited in Peluchette & Rust, 2005) suggested that the use of some forms of technology require substantial time, either in terms of course development, course management, or keeping current with the technology. These time constraints may result from the faculty members' other teaching, research, service, or administrative responsibilities.

Hulbert, et al.'s (as cited in Peluchette & Rust, 2005) substantial empirical evidence indicated that time constraint is a major drawback to faculty use of instructional technology. Driver (2002) suggested that these issues will become more important as faculty receive increasing pressure from both their institutions and their accrediting agencies to incorporate technology-enhanced instruction.

In another study, the adoption patterns and characteristics of faculty who integrate computer technology to support teaching and learning in higher education were examined (Jacobsen, as cited in Less, 2003). In this study, the factors related to faculty use of computer technology were patterns of computer use, computer expertise, generalized self-efficacy, demographic information, changes to teaching and learning, motivators to integrate technology for teaching and learning, impediments to integrating technology for teaching and learning, learning about technology, methods for using and integrating



technology in teaching and learning, and evaluating the outcomes of using technology for teaching and learning (Less).

No innovation has a realistic chance of succeeding unless faculty are able to express, define, and address problems as they see them, unless faculty come to see the innovation and change as theirs. The ultimate outcome of the innovation . . . depends on when and how faculty become part of the decision to initiate them (Bongalos, Bulaon, Celedonio de Guzman, & Ogarte, 2006, p. 1).

In other words, faculty have access to technology in postsecondary education, but what factors impact faculty use of technology in postsecondary education?

### Theoretical Framework

The theoretical framework for this research is composed of four theories: Rogers' (2003) diffusion of innovations, Hall and Hord's (1987) concerns-based adoption model (CBAM), Davis' (1986) technology acceptance model (TAM), and Sherry and Gibson's (2002) learning/adoption trajectory model. The process of adopting innovations has been studied for over 30 years, and several scholars have proposed technology adoption models. Two of the most popular such models are Rogers' diffusion of innovations and Hall and Hord's CBAM (Sahin & Thompson, 2007).

Rogers' model, described in his book *Diffusion of Innovations*, has been identified as one of the most popular adoption models (as cited in Sherry & Gibson, 2002). Many researchers from a broad variety of disciplines have used the model as a framework. Dooley (1999) and Stuart (2000) mentioned several of these disciplines, such



as political science, public health, communications, history, economics, technology, and education, and defined Rogers' theory as a widely used theoretical framework in the area of technology diffusion and adoption (Sahin & Thompson, 2006).

Rogers (1995), in his revised theoretical framework of change and the diffusion of innovations, defined *diffusion* as the process by which an innovation is communicated through certain channels over time among the members of a social system. The innovation is an idea, practice, or project that is perceived as new. The newness of the innovation may be because of recent knowledge, persuasion, or decision to adopt an innovation. Innovations viewed by participants as having greater relative advantage, compatibility, trialability, observability, and less complexity are generally adopted more quickly (Adams, 2002).

To better understand the level of technology adoption, Rogers (as cited in Sahin & Thompson, 2006) described five variables: perceived attributes, type of innovation–decision, nature of communication channels, nature of the social system, and the efforts of change agents. In Rogers' original work, *Diffusion of Innovations*, his model is streamlined into the following four variables: innovation, communication channels, time, and social system (Rogers, 2003).

The perceived attributes are defined as Rogers (1995) described the innovativeness dimension: “as measured by the time at which an individual adopts an innovation or innovations” (p. 162). He defined five adopter categories based on innovativeness, or the degree to which an individual is relatively earlier in adopting new ideas than other members of a social system. Rogers (as cited in Adams, 2002)

partitioned the continuum of innovativeness into five adopter categories (innovators, early adopters, early majority, late majority, and laggards).

Communication channels are the process by which participants create and share information with one another in order to reach a mutual understanding. Diffusion is a particular type of communication in which the message content that is exchanged is concerned with a new idea. The essence of the diffusion process is the information exchange through which one individual communicates a new idea to one or several others. At its most elementary form, the process involves (a) an innovation; (b) an individual or unit of adoption that has knowledge of, or has experienced using, the innovation; (c) another individual or other unit that does not yet have knowledge of, or experience with, the innovation; and (d) a communication channel connecting the two units (Rogers, 2003).

Time is the third element in the diffusion process. The time element is involved in diffusion in (a) the innovation–decision process by which an individual passes from first knowledge of an innovation through its adoption or rejection; (b) the innovations of an individual or other unit of adoption (that is, the relative earliness/lateness with which an innovation is adopted) compared with other members of a system; and (c) an innovation’s rate of adoption in a system, usually measured as the number of members of the system who adopt the innovation in a given time period (Rogers, 2003).

The social structure of the system affects the innovation’s diffusion in several ways. The social systems constitute a boundary within which an innovation diffuses. Here, the focus is on how the system’s social structure affects diffusion, the effect of norms on the diffusion, the roles of opinion leaders and change agents, types of

innovation–decisions, and the consequences of innovation. Each of these issues involves relationships between the social system and the diffusion process that occurs within it (Rogers, 2003).

Others have also suggested that Rogers' (2003) diffusion of innovations theory is the most appropriate for investigating the adoption of technology in higher education and educational environments (Medlin, 2001; Parisot, 1995). In fact, much diffusion research involves technological innovations, so Rogers usually used the words *technology* and *innovation* as synonyms (as cited in Sahin & Thompson, 2006).

In addition to Rogers' diffusion theory, Hall and Hord's (1973) CBAM described another adoption model, in which they enumerated eight different levels of use of an innovation: nonuse, orientation, preparation, mechanical use, routine, refinement, integration, and renewal (as cited in Sahin & Thompson, 2007).

Hall, et al. (1973) initially described the CBAM when focusing on the change facilitator role in a faculty member's decision to use or to not use technology. Hall et al.'s research was based on that of Fuller (1969), a counseling psychologist analyzing teacher education practices from a clinical rather than pedagogical viewpoint. Fuller observed a discrepancy between teachers' needs and educational activities. She formulated a theory based on teachers' concerns. Concerns are described as "the composite representation of the feelings, preoccupations, thoughts, and considerations given to a particular issue or task" (Hall, George, & Rutherford, as cited in Adams, 2002, p. 2).

Fuller (1969) observed that these concerns generally occurred in a sequence and hypothesized this to be a developmental process. Fuller described three main phases of

concern experienced by teachers: (a) concern with self, (b) concern with task, and (c) concern with impact. The CBAM identifies an important precondition to a concerns-based approach: that an effective change facilitator understands how his or her clients perceive change and adjust themselves accordingly. Change is viewed as a process, not an event, and much of what occurs during the change process is possible to anticipate. The model contends that those participating in the change process must give attention to the faculty member's use or nonuse of the innovation (Adams, 2002).

Innovation, change, and diffusion are interlinked processes. An integration of Hall's (1979) definitions and faculty use of technology would be "an unfolding of experience and a gradual development of skill and sophistication in the user of a process or product that is new to a potential user" (p. 203). An integration of Rogers' (1995) definition and faculty use of technology would be "the process by which an idea, practice, or project that is perceived as new by an individual or other unit of adoption is communicated through certain channels over time among the members of a social system" (p. 11).

"Typically, professors use software tools, like word processors, but rarely use technology for teaching or require students to use it for assessment purposes" (Schrum, Skeelee, & Grant, 2002, p. 258). McKenzie (2001) and Parisot (1995) criticized the standard approach of higher education institutions and schools—they buy the new and complex technologies and simply make them available to faculty members and teachers. In fact, "if higher education wants to survive in the expansion of technology, then it must evolve, be prepared and prepare its faculty to implement the new technologies within their classrooms" (Hagenson & Castle, 2003, p. 2).

If one views Hall's and Rodger's theories from a faculty use of technology perspective, the progression of the description of change is easily observed. Hall described directionality and development of skills over time as important factors in faculty use of technology, while Rogers wrote of clear communication of information and its importance in regards to how a faculty member is introduced to new technology (as cited in Adams, 2002). In reality, the definitions of innovation, change, and diffusion as they pertain to technology are evolving, and faculty use of technology must also evolve to prepare for today's technology in today's classroom.

Davis' (1989) TAM has been associated with understanding technology use and remains an important and viable tool for researchers in this arena. According to the TAM, perceived usefulness and perceived ease of use are hypothesized and empirically supported as the fundamental determinants of user acceptance of a given new technology. *Perceived usefulness* is defined as the extent to which a person believes that using a particular technology will enhance his or her job performance, and *perceived ease of use* is defined as the degree to which a person believes that using the system will be free from effort (Davis, as cited in Gibson, Harris, & Colaric, 2008).

In TAM research, user acceptance is characterized as a combination of a positive attitude toward the technology, intention to use the system, and actual use of the system (Davis, as cited in Taylor & Todd, 1995). The TAM's utility is evidenced by the numerous modifications and augmentations that have been made by researchers to address the question of technology acceptance as it relates to several variables. Gefen and Straub (1997) used the TAM and concluded that women and men differ in their perceptions, but not use, of e-mail, and Venkatesh and Morris (2000) identified gender

differences with regard to the relative impact of perceived usefulness and perceived ease of use in predicting technology acceptance. User inexperience has also been found to play a role in the relative predictive power of the TAM's central constructs of ease of use and usefulness (Taylor & Todd, as cited in Gibson et al., 2008).

A fourth adoption model, the learning/adoption trajectory model, is similar to those proposed by Rogers, Davis, and Hall and Hord, but this model emphasizes the dynamic nature of the technology adoption process. This model uses a cyclical rather than a linear process and is a research-based model established on a 5-year project with teachers in Colorado. The learning/adoption trajectory model was created to evaluate K–12 teachers' technology use level. However, this model was successfully used in describing the level of higher-level faculty technology use in a research study conducted by Hagenson (as cited in Sahin & Thompson, 2007). In the questionnaire used in this quantitative study, the learning/adoption trajectory model was used as a framework to define the technology adoption level of the faculty in a college of education at a major midwestern university (Sahin & Thompson). The stages of this model are described as follows:

- Stage 1.       Teacher as Learner: In this information-gathering stage, teachers learn the knowledge and skills necessary for performing instructional tasks using technology.
- Stage 2.       Teacher as Adopter: In this stage, teachers progress through stages of personal and task management concern as they experiment with the technology, begin to try it out in their classrooms, and share their experiences with their peers.

- Stage 3.       Teacher as Colearner: In this stage, teachers focus on developing a clear relationship between technology and the curriculum, rather than concentrating on task management aspects.
- Stage 4.       Teacher as Reaffirmer/Rejecter: In this stage, teachers develop a greater awareness of intermediate learning outcomes (i.e., increased time on tasks and greater student engagement) and begin to create new ways to observe and assess impact on student products and performances, and to disseminate exemplary student work to a larger audience.
- Stage 5.       Teacher as Leader: In this stage, experienced teachers expand their roles to become action researchers who carefully observe their practice, collect data, share the improvements in practice with peers, and teach new members. Their skills become portable.

In this model, gaining knowledge about the innovation is described as a continuous process for all users whether they are beginners or experts. In the first two stages, ongoing, sympathetic, technical support and mentoring by trusted peers are critical factors. Thus, “given adequate training, mentoring, access, and technical support, teachers tend to be more willing to move to the next phase at which they become co-learners and co-explorers with their students” (Sherry & Gibson, as cited in Sahin & Thompson, 2007, p. 171). In fact, previous versions of this model did not include the last stage, Teacher as Leader, present in the current model. After discovering that teachers were sharing and expanding their ideas, cooperating with others, and acting as mentors for other teachers in the project, they added the fifth stage to the model: “It is at the

teacher as leader stage that we must break away from linear models and start looking at more dynamic models” (Sherry & Gibson, as cited in Sahin & Thompson, p. 171).

With these theories, this researcher examined faculty use of technology in postsecondary education, with insight into technological uses in social work education. This examination serves to generate an understanding of potential factors that may impact overall faculty use of technology.



## CHAPTER III

### METHODOLOGY

This chapter presents the methods and procedures for explaining and describing the scope of the relationship between the dependent variable, faculty use of technology in postsecondary education, and the independent variables of faculty age, gender, academic rank, employment status, principal field of teaching, and type of institution. The following are described: research design; description of the site population, sample instrumentation, treatment of the data, and limitations of the study.

#### Research Design

A quantitative and descriptive research design was employed for this study. The study was designed to ascertain data in order to describe and examine faculty use of technology in postsecondary education.

This research design was chosen because the quantitative and descriptive analysis allowed for the descriptive analysis of the demographic characteristics of the respondents. Also, this research design gives indication of the type of study proposed and how it was conducted. This study was designed to examine whether a relationship exists between faculty age, gender, academic rank, employment status, principal field of teaching, type of institution, and faculty use of technology in postsecondary education.

### Description of the Site

The NSOPF:04, conducted by RTI and sponsored by the NCES, is a nationally representative study that collects data regarding the characteristics, workload, and career paths of full- and part-time postsecondary faculty and instructional staff at public and private, not-for-profit, 2- and 4-year institutions in the United States. Conducted previously in 1988, 1993, and 1999, it serves as a continuing response to a need for data on faculty and instructional staff. Of the 34,330 eligible sample members, 26,110 (76%) completed the faculty questionnaire (NCES, 2006).

### Population and Sample

The NSOPF:04 was conducted previously in 1988, 1993, and 1999; it serves as a continuing need for data on faculty and instructional staff. A two-stage sampling methodology was utilized. In the first stage, the institution sample was drawn based on a probability proportional to size (PPS) selection methodology, where each institution was assigned a composite measure of size (MOS) that reflected the number of eligible faculty and instructional staff in each of six strata. A sample of 1,080 postsecondary institutions was selected for participation; 1,070 of these were eligible. Each institution was asked to provide a list of all of the full- and part-time faculty and instructional staff that the institution employed during the Fall 2003 term. Institutions were asked to include all employees with faculty status (both instructional and non-instructional) and all others with instructional responsibilities, regardless of faculty status. A total of 980 institutions provided a list suitable for sampling (NCES, 2006).

In the second stage of sampling, full- and part-time faculty and instructional staff employed by participating institutions as of November 1, 2003, were selected. Sampling was conducted on a flow basis, as lists were received, checked for accuracy, and processed. A total of 35,630 faculty were sampled from participating institutions. Of these, 34,330 were eligible sample members; 26,110 (76%) completed the faculty questionnaire (NCES, 2006).

Data from the full-scale study was used by the researcher to examine the independent and dependent variables selected for this study. NSOPF:04 provides data on each of these variables. The researcher used the NCES Data Analysis System (DAS) that was constructed for public release and is available to the public at <http://nces.ed.gov/das>. Electronically documented restricted access data files with associated Electronic Codebooks (ECBs) are also available with permission from the NCES (2006) to qualified researchers.

### Instrumentation

The NSOPF:04 Institution questionnaire was designed to be self-administered via the Internet; the National Study of Faculty and Students (NSoFaS:04) Web site for institutional participation provided secure access to the questionnaire and information about each component of the study. To expedite completion, it also can be administered as a computer-assisted telephone interview (CATI), if necessary. The instrument was divided into major sections that collected information on the number of faculty and instructional staff employed at the target institution, the policies and practices that affected full-time faculty and instructional staff, the policies and practices that affected

part-time faculty and instructional staff, and the percentage of undergraduate instruction assigned to various instructional personnel (NCES, 2006).

The NSOPF:04 Faculty instrument was designed as a Web-based instrument for self-administration via the Internet, and by CATI for non-response follow-up. The Faculty Web site, like the Institution Web site, provided secure access to the self-administered questionnaire as well as additional information about the study. Both instruments were designed to accommodate the mixed-mode data collection approach and to ensure the collection of high-quality data. Design considerations included appropriate question wording for both self-administered and telephone interviews, and checks for out-of-range or inconsistent values. The faculty instrument consisted of the following eight sections grouped by topic (NCES, 2006):

1. Employment during the Fall 2003 term (including academic rank, tenure status, and field of teaching);
2. Academic and professional background (including highest degree earned and employment history);
3. Institutional responsibilities and workload (including instructional activities and other work responsibilities performed in a typical week);
4. Scholarly activities (including productivity, funding of scholarly activities, and field of research);
5. Job satisfaction and retirement plans;
6. Monetary compensation (including income from the institution and other sources, structure of the employment contract, and household income);

7. Socio-demographic information (including gender, race, date of birth, marital status, number of dependent children, and citizenship); and
8. Opinions about working conditions at the institution.

### Data Analysis

Statistical treatment of the data included descriptive statistics, which include measures of central tendency, frequency distribution, and cross-tabulations. Using Statistical Package for the Social Sciences (SPSS) software, preliminary frequencies and cross-tabulation of data were derived from the total population of faculty already available in the data bank.

Frequency distribution was used to analyze each variable of the study in order to generate demographic information and summarize the basic measurements. Cross-tabulations were performed to demonstrate the statistical relationships between the dependent variable (faculty use of technology) and the independent variables (age, gender, academic rank, employment status, principal field of teaching, and type of institution). This measurement was used to show the strength of the relationship between the variables. Chi-square was used to test whether there was a significant statistical significance at the .05 level of probability among the variables in the study.

### Limitations of the Study

This study has the following limitations. The data used for this study was derived from existing data based upon survey instruments that were created for other general uses not specific to this study; therefore, the findings may not indicate any direct relationship between the dependent variable (faculty use of technology) and the independent variables

(age, gender, academic rank, employment status, principal field of teaching, and type of institution).

The researcher used the NCES Data Analysis System (DAS) that has been constructed for public release and is available to the public at <http://nces.ed.gov/das>. Data was derived from the total population of faculty already available in the data bank. The data did not provide the researcher with information specific to faculty employed at historically black colleges and universities.

### Summary

This study presents a design for examining and explaining the relationship between the dependent variable, faculty use of technology, and the independent variables of faculty age, gender, academic rank, employment status, principal field of teaching, type of institution, and faculty use of technology in postsecondary education. This chapter described the research design, description of the site population, sample instrumentation, treatment of the data, and limitations of the study.

## CHAPTER IV

### PRESENTATION OF FINDINGS

The purpose of this study was to use archival data from the National Study of Postsecondary Faculty (NSOPF:04) to describe and examine faculty use of technology in postsecondary education. The NSOPF:04, conducted by Research Triangle International (RTI) and sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES), is a nationally representative study that collects data regarding the characteristics, workload, and career paths of full- and part-time postsecondary faculty and instructional staff at public and private not-for-profit 2- and 4-year institutions in the United States. Conducted previously in 1988, 1993, and 1999, the NSOPF:04 serves as a continuing response to a need for data on faculty and instructional staff (NCES, 2006). This researcher analyzed archival data collected in 2004 by RTI. In 2004 34,330 eligible sample members were identified; 29,820 (87%) were contacted, and 26,110 (76%) completed the survey (NCES). The findings for the current study are presented in the following two sections: demographic data and research questions and hypotheses.

### Demographic Data

The demographic variables, age, gender, academic rank, principal field of teaching, employment status, and the type of institution where the faculty member is employed were obtained from the NSOPF:04. Frequency distributions for these variables are presented in Table 1.



Table 1: Frequency Distributions – Demographic Variables N = 26,110

Demographic Variable	Percent*
<u>Age</u>	
Less than 30 years of age	3.9
31 to 40	19.9
41 to 50	28.3
51 to 60	31.1
Over 60 years of age	16.7
<u>Gender</u>	
Male	57.5
Female	42.5
<u>Academic Rank</u>	
Professor	18.0
Associate Professor	13.6
Assistant Professor	14.7
Instructor	22.3
Lecturer	5.2
Other	23.7
Not Applicable	2.6
<u>Employment Status</u>	
Full-time	56.3
Part-time	43.7
<u>Principal Teaching Field</u>	
Business, law, and communications	11.4
Health sciences	12.5
Humanities	14.0
Natural sciences and engineering	23.8
Social sciences and engineering	18.7
Occupationally specific programs	5.3
All other programs	13.5
No principal teaching field	0.7
<u>Type of Institution</u>	
Four-year	69.4
Two-year	30.6

\*Totals may not sum to 100% because of rounding

The largest group of participants were between ages 51 – 60 (31.1%), and between ages 41 – 50 (28.3%). Participants less than 30 years of age formed the smallest group (3.9%). Of this population group, 57.5% were males and 42.5% were females. Eighteen percent of the sample population reported their academic rank as professor, with 22.3% indicating their academic rank as instructor. 2.6% of the participants reported not applicable. The largest group of participants (56.3%) reported their employment status was full-time. Among the principal teaching fields, 23.8% of the participants were in natural sciences and engineering, followed by occupationally specific programs. Less than 1% of the participants (0.7%) reported no principal teaching field. The majority of the faculty members (69.4%) indicated they were employed at four-year institutions.

### Research Questions and Hypotheses

Research Question 1: Is there a relationship between faculty age and faculty use of technology in postsecondary education?

Hypothesis 1: There is no statistically significant relationship between faculty age and faculty use of technology in postsecondary education.

Five technology variables were obtained from the NSOPF:04 survey results. Each of the responses to these variables was crosstabulated by faculty age. Chi-square tests for independence were used to determine if an association existed between each of the variables and faculty age. Table 2 presents results of the analysis for number of hours spent emailing students.

Table 2: Crosstabulation – Number of Hours Spent Emailing Students and Faculty Age

Hours	Faculty Age				
	Less than 30	31 to 40	41 to 50	51 to 60	61 and over
1 to 5	4.0	20.5	29.1	30.9	15.4
6 to 10	2.2	18.5	29.4	33.0	16.9
11 to 15	4.0	19.1	22.9	40.8	13.3
16 to 20	2.4	13.1	25.9	39.3	19.2
21 to 25	0.7	19.0	24.4	39.6	16.2

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$$\chi^2 (16) = 9.26, p = .902$$

Most of the faculty members, regardless of age, spent more than 10 hours a week emailing students. To determine if there was an association between the age of the faculty member and the amount of time they spent emailing students, a chi-square test for independence was used. The results of this analysis were not statistically significant,  $\chi^2 (16) = 9.26, p = .902$ , indicating that age of the faculty member and number of hours spent emailing were independent.

The second crosstabulation examined the association between the age of the faculty member and satisfaction with equipment and facilities. The results of this analysis are presented in Table 3.

Table 3: Crosstabulation – Satisfaction with Equipment/Facilities and Faculty Age

	Faculty Age				
	Less than 30	31 to 40	41 to 50	51 to 60	61 and over
Very satisfied	4.1	18.9	27.4	30.7	18.8
Somewhat satisfied	3.8	20.5	28.9	30.8	16.0
Somewhat dissatisfied	3.7	21.3	28.8	33.1	13.1
Very dissatisfied	3.4	17.5	29.8	33.4	15.9

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$$\chi^2 (12) = 1.82, p = .999$$

Less distinction relative to age groups was noted in faculty members' satisfaction and dissatisfaction with the facilities and technological equipment at their institutions. To determine if faculty age was associated with satisfaction with facilities and equipment, a chi-square test for independence was used. The results of this analysis were not statistically significant,  $\chi^2 (12) = 1.82, p = .999$ , indicating that age of the faculty member was independent of satisfaction with facilities and technological equipment.

The age of the faculty member was crosstabulated by satisfaction with technology-based activities. Results of this analysis are presented in Table 4.

Table 4: Crosstabulation – Satisfaction with Technology-based Activities and Faculty

Age

	Faculty Age				
	Less than 30	31 to 40	41 to 50	51 to 60	61 and over
Very satisfied	4.1	19.2	27.3	30.2	19.2
Somewhat satisfied	3.8	20.5	28.9	30.8	16.0
Somewhat dissatisfied	3.7	21.3	28.8	33.1	13.1
Very dissatisfied	3.4	17.5	29.8	33.4	15.9

$\chi^2 (12) = 2.01, p = .999$

Older faculty members appeared to be more satisfied with technology-based activities than younger faculty members. A chi-square test for independence was used to test for the association between the age of the participant and their level of satisfaction with technology-based activities. The results of this analysis were not statistically significant,  $\chi^2 (12) = 2.01, p = .999$ , providing support that satisfaction with technology-based activities was independent of faculty members' ages.

The responses regarding the technology index were crosstabulated by the age of the faculty. Table 5 presents results of this analysis.

Table 5: Crosstabulation – Technology Index and Faculty Age

	Faculty Age				
	Less than 30	31 to 40	41 to 50	51 to 60	61 and over
Use neither websites/e-mail	4.3	19.0	26.2	30.3	20.1
Use e-mail, not websites	4.8	20.0	28.2	30.8	16.2
Use websites, not e-mail	2.2	19.0	30.3	31.8	16.7
Use both websites/e-mail	3.0	20.6	29.7	31.9	14.9

$\chi^2 (12) = 2.56, p = .998$

The faculty members who were between 51 and 60 years of age appeared to be the most likely to use both websites and email. To determine if the use of technology (websites and e-mail) were associated with the age of the participants, a chi-square test for independence was used. Results of this analysis were not statistically significant,  $\chi^2 (12) = 2.56, p = .998$ . Based on this finding, it appears that use of technology was not related to the age of the participants.

The use of a website for instructional duties was crosstabulated by the age of the participant. The results of this analysis are presented in Table 6.

Table 6: Crosstabulation – Website for Instructional Duties and Faculty Age

	Faculty Age				
	Less than 30	31 to 40	41 to 50	51 to 60	61 and over
No website	4.5	19.6	27.4	31.6	17.7
Website	2.9	20.4	29.7	31.9	15.1

$\chi^2 (4) = 0.73, p = .948$

The percentage of participants who used a website for instructional duties appeared to be similar to those who did not use a website. A chi-square test for independence was used to examine the association between the age of the participant and the use of a website for instructional purposes. The results of this analysis were not statistically significant,  $\chi^2(4) = 0.73, p = .948$ . This finding provides evidence that using a website for instructional duties was not related to the age of the participant.

In summary, the results of the five crosstabulations and chi-square analyses were not statistically significant. Based on these findings, the null hypothesis of no relationship between faculty age and faculty use of technology in postsecondary education is retained.

Research Question 2: Is there a relationship between faculty gender and faculty use of technology in postsecondary education?

Hypothesis 2: There is no statistically significant relationship between faculty gender and faculty use of technology in postsecondary education.

The gender of the participants was crosstabulated by the five questions on the NSOPF-04 for this hypothesis. The association between gender and their responses were tested using chi-square tests for independence. Table 7 presents results of this analysis.

Table 7: Crosstabulation – Number of Hours Spent Emailing Students and Gender

Hours per Week	Faculty Gender	
	Male	Female
1 to 5	58.7	41.3
6 to 10	49.9	50.1
11 to 15	45.6	54.4
16 to 20	40.5	59.5
21 to 25	29.5	70.5

$$\chi^2 (4) = 19.10, p < .001$$

Female faculty members (70.5%) were more likely to spend 21 to 25 hours per week emailing students than male faculty (29.5%). Male faculty members (58.7%) were more likely to spend 1 to 5 hours a week emailing students compared to female faculty (41.3%). The chi-square test for independence used to examine the association between gender and hours spent emailing students was statistically significant,  $\chi^2 (4) = 19.10, p < .001$ . This finding indicated that female faculty members were more likely to spend a greater amount of time emailing students than male faculty members.

Satisfaction with equipment/facilities was crosstabulated by gender of the participants. The results of this analysis are presented in Table 8.



Table 8: Crosstabulation – Satisfaction with Equipment/Facilities and Gender

Satisfaction with Equipment/Facilities	Faculty Gender	
	Male	Female
Very satisfied	58.4	41.6
Somewhat satisfied	57.7	42.3
Somewhat dissatisfied	55.2	44.8
Very dissatisfied	53.4	46.6

$\chi^2 (3) = 0.65, p = .886$

A higher level of male participants was found at each level of satisfaction with equipment/facilities. To determine if there was an association between satisfaction with equipment/facilities and gender of the participants, a chi-square test for independence was completed. The results of this analysis were not statistically significant,  $\chi^2 (3) = 0.65, p = .886$ , providing evidence that the two variables were not associated.

A crosstabulation was used to examine the association between gender and level of satisfaction with technology-based activities. The results of this analysis are presented in Table 9.

Table 9: Crosstabulation – Satisfaction with Technology-Based Activities and Gender

Satisfaction with Technology-Based Activities	Faculty Gender	
	Male	Female
Very satisfied	56.5	43.5
Somewhat satisfied	58.0	41.1
Somewhat dissatisfied	57.0	43.0
Very dissatisfied	54.3	45.7

$\chi^2 (3) = 0.44, p = .932$

The comparison of satisfaction with technology-based activities between male and female faculty members showed higher levels of satisfaction among male faculty than female faculty. However, the results of the chi-square tests for independence used to examine the association between satisfaction with technology-based activities and gender were not statistically significant,  $\chi^2 (3) = 0.44, p = .932$ . Based on this finding, it appears that satisfaction with technology-based activities was not associated with gender.

The scores for the technology index were crosstabulated by gender. The results of this analysis are presented in Table 10.

Table 10: Crosstabulation –Technology Index and Gender

Satisfaction with Technology Index	Faculty Gender	
	Male	Female
Use neither websites/e-mail	57.6	42.4
Use e-mail, not websites	55.6	44.4
Use websites, not e-mail	56.1	43.9
Use both websites/e-mail	59.3	40.7

$\chi^2 (3) = 0.34, p = .952$

Satisfaction with technological index was examined according to faculty who used neither websites nor email, those who used one or the other, and those who used both websites and email. Male faculty members who used neither websites nor email (57.6%) appeared greater than female faculty members (42.4%) who reported that they used neither websites nor email. Those male faculty members who reported using both websites and email (59.3%) also appeared greater than female faculty members who

reported using both websites and email (40.7%). The results of the chi-square analysis test for independence however was not statistically significant,  $\chi^2 (3) = 0.34, p = .952$ . This finding provided support that the technology index was not associated with the gender of the faculty member.

The use of websites for instructional duties was crosstabulated by gender. Table 11 presents results of this analysis.

Table 11: Crosstabulation – Use of Websites for Instructional Duties and Gender

Use of Websites for Instructional Duties	Faculty Gender	
	Male	Female
No website	56.4	43.6
Website	59.0	41.0

$\chi^2 (1) = 0.14, p = .710$

A higher percentage of male faculty (59.0%) reported that they used websites for instructional duties more than female faculty (41.0%). The results of the chi-square test for independence were used to determine that the association between the use of websites for instructional duties and gender were not statistically significant,  $\chi^2 (1) = 0.14, p = .710$ . As a result of this analysis, no association was found between the use of websites for instructional duties and gender.

In summary, although one of the five analyses comparing faculty use of technology by gender was statistically significant, the null hypothesis of no relationship was retained. Male and female faculty members appear to be similar in their use of technology.

Research Question 3: Is there a relationship between faculty academic rank and faculty use of technology in postsecondary education?

Hypothesis 3: There is no statistically significant relationship between faculty academic rank and faculty use of technology in postsecondary education.

The academic rank of the faculty member was used to determine associations with faculty use of technology. Table 12 presents the results of the crosstabulation between hours per week e-mailing students and academic rank.

Table 12: Crosstabulation – Number of Hours Spent Emailing Students and Academic Rank

Hours	<u>Academic Rank</u>						
	Not Applicable	Professor	Assoc. Professor	Asst. Professor	Instructor	Lecturer	Other
1 to 5	2.5	19.7	14.6	15.5	19.8	5.7	22.2
6 to 10	2.6	23.6	19.1	18.3	14.4	6.9	15.1
11 to 15	3.9	21.7	20.5	18.4	15.8	7.2	12.6
16 to 20	4.4	26.2	25.3	15.2	12.4	3.5	13.0
21 to 25	0.6	21.4	13.1	20.3	22.9	5.7	15.9

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$$\chi^2 (24) = 19.86, p = .704$$

The number of hours per week spent e-mailing students were similar across the seven academic ranks. The results of the chi-square test for independence used to determine if an association existed between academic rank and number of hours spent e-mailing students in a typical week were not statistically significant,  $\chi^2 (24) = 19.86, p =$

.704. Based on this finding, it appears that academic rank and number of hours spent e-mailing students was not associated.

Satisfaction with equipment/facilities was crosstabulated by academic rank. The results of this analysis are presented in Table 13.

Table 13: Crosstabulation – Satisfaction with Facilities/Equipment and Academic Rank

Satisfaction with Facilities/Equipment	<u>Academic Rank</u>						
	Not Applicable	Professor	Assoc. Professor	Asst. Professor	Instructor	Lecturer	Other
Very Satisfied	2.7	16.3	11.5	12.4	24.9	5.4	26.9
Somewhat Satisfied	2.4	18.6	14.4	15.4	22.2	5.1	21.9
Somewhat Dissatisfied	2.5	20.3	16.1	17.3	19.1	5.2	19.4
Very Dissatisfied	2.3	20.1	14.9	17.6	20.1	6.6	18.4

$\chi^2 (18) = 5.65, p = .997$

The percentages of faculty within each academic rank were similar in their levels of satisfaction with equipment and facilities. The chi-square test for independence used to test for the association between satisfaction with equipment and facilities and academic rank was not statistically significant,  $\chi^2 (18) = 5.65, p = .997$ . This finding provided support that academic rank was not associated with their satisfaction with facilities and equipment.

The percentages of faculty members' satisfaction with technology-based activities were crosstabulated by the academic rank of the participants. The results of this analysis are presented in Table 14.

Table 14: Crosstabulation – Satisfaction with Technology-Based Activities and Academic Rank

Satisfaction with Technology-Based Activities	<u>Academic Rank</u>						
	Not Applicable	Professor	Assoc. Professor	Asst. Professor	Instructor	Lecturer	Other
Very Satisfied	2.6	16.4	11.6	13.4	25.2	5.9	24.9
Somewhat Satisfied	2.4	19.0	15.1	15.2	20.8	4.8	22.7
Somewhat Dissatisfied	2.7	20.8	16.1	17.4	18.5	4.7	19.9
Very Dissatisfied	2.5	21.8	16.6	16.9	20.4	4.6	17.2

$\chi^2 (18) = 5.48, p = .997$

The percentage of faculty members' satisfaction with technology-based activities was similar within each academic rank. The results of the chi-square analysis used to determine if an association existed between satisfaction with technology-based activities and academic rank were not statistically significant,  $\chi^2 (18) = 5.48, p = .997$ . This result provided evidence that the academic rank of the participant was not associated with their satisfaction with technology-based activities.

The participants were asked to indicate the extent to which they used websites and e-mail (technology index). Their responses were crosstabulated by their academic rank for presentation in Table 15.

Table 15: Crosstabulation –Technology Index and Academic Rank

Technology Index	<u>Academic Rank</u>						
	Not Applicable	Professor	Assoc. Professor	Asst. Professor	Instructor	Lecturer	Other
Use neither websites/ e-mail	2.8	11.6	8.9	11.8	3.8	3.5	30.5
Use e-mail, not websites	2.6	17.4	12.9	13.0	22.4	5.8	25.8
Use websites, not e-mail	2.3	17.3	11.7	12.1	26.3	4.0	26.4
Use both websites/ e-mail	2.5	22.8	17.4	18.5	16.1	5.8	16.9

$\chi^2 (18) = 18.51, p = .423$

The percentage of participants within each academic rank was similar in regard to their use of websites and e-mail. The chi-square test for independence used to determine if the technology index was associated with academic rank was not statistically significant,  $\chi^2 (18) = 18.51, p = .423$ . This finding indicated that the two variables were not associated.

The participants were asked if they used a website for instructional duties. Their responses to this question were crosstabulated by academic rank. Table 16 presents results of this analysis.

Table 16: Crosstabulation – Website for Any Instructional Duties and Academic Rank

Website for Instructional Duties	<u>Academic Rank</u>						
	Not Applicable	Professor	Assoc. Professor	Asst. Professor	Instructor	Lecturer	Other
No website	2.6	15.1	11.3	12.5	25.8	4.9	27.7
Website	2.5	22.3	16.9	17.9	17.0	5.7	17.7

$$\chi^2 (8) = 7.53, p = .274$$

The percentages of participants at each academic rank were compared to their use of a website for instructional duties. The responses were similar at each rank. Results of the chi-square test for independence used to determine if academic rank was associated with use of a website for any instructional duties was not statistically significant,  $\chi^2 (8) = 7.53, p = .274$ . This lack of statistical significance provided support that the use of websites for instructional duties was not associated with academic rank.

In summary, the results of the five analyses comparing technology items by academic rank provided no evidence of statistically significant associations. Based on these findings, the null hypothesis of no relationship between faculty use of technology and academic rank was retained.



Research Question 4: Is there a relationship between faculty employment status and faculty use of technology in postsecondary education?

Hypothesis 4: There is no statistically significant relationship between faculty employment status and faculty use of technology in postsecondary education.

The employment status (full-time or part-time) of the participants was crosstabulated by their responses to the five items measuring technology from the NSOPF-04. Table 17 presents the results of the analysis crosstabulating the number of hours per week e-mailing students by employment status.

Table 17: Crosstabulation – Number of Hours Spent Emailing Students and Employment Status

Hours	<u>Employment Status</u>	
	Full-time	Part-time
1 to 5	59.9	40.1
6 to 10	76.5	23.5
11 to 15	78.7	21.3
16 to 20	84.8	15.2
21 to 25	75.3	24.7

$$\chi^2 (4) = 18.16, p < .001$$

A higher percentage of full-time faculty members spent a greater number of hours e-mailing students per week than part-time faculty members. The results of the chi-square test for independence used to determine if an association existed between the number of hours per week emailing students and employment status was statistically

significant,  $\chi^2 (4) = 18.16, p < .001$ . Based on this finding, it appears that number of hours per week spent e-mailing students was related to employment status.

The satisfaction with equipment/facilities was crosstabulated by employment status. The results of this analysis are presented in Table 18.

Table 18: Crosstabulation – Satisfaction with Facilities/Equipment and Employment Status

Satisfaction with Equipment/Facilities	Employment Status	
	Full-time	Part-time
Very satisfied	48.8	51.2
Somewhat satisfied	58.7	41.3
Somewhat dissatisfied	64.5	35.5
Very dissatisfied	62.2	37.8

$\chi^2 (3) = 5.93, p = .115$

A higher percentage of part-time faculty (51.2%) were very satisfied with facilities/equipment, while a greater percentage of full-time faculty (62.2%) were very dissatisfied with facilities/equipment. The chi-square test for independence used to test for a relationship between satisfaction with facilities/equipment and employment status was not statistically significant,  $\chi^2 (3) = 5.93, p = .115$ . This finding provided evidence that the two variables were not related.

The participants were asked to indicate their satisfaction with technology-related activities. Their responses to this question were crosstabulated by employment status for presentation in Table 19.

Table 19: Crosstabulation – Satisfaction with Technology-related Activities and Employment Status

Satisfaction with Technology-related Activities	Employment Status	
	Full-time	Part-time
Very satisfied	51.2	48.8
Somewhat satisfied	59.2	40.8
Somewhat dissatisfied	62.9	37.1
Very dissatisfied	62.0	38.0

$\chi^2 (3) = 3.51, p = .320$

A greater percentage of full-time faculty members (62.0%) were very dissatisfied with technology-related activities, while a smaller percentage of part-time faculty members (38.0%) were very dissatisfied. The results of the chi-square test for independence used to examine the relationship between satisfaction with technology-related activities and employment status were not statistically significant,  $\chi^2 (3) = 3.51, p = .320$ . This finding provided support that an association did not exist between satisfaction with technology-related activities and employment status.

The percentage of participants who responded to the item concerned with the technology index (website/e-mail) was crosstabulated by employment status. Table 20 presents results of this analysis.

Table 20: Crosstabulation – Technology Index and Employment Status

Technology Index	<u>Employment Status</u>	
	Full-time	Part-time
Use neither websites or e-mail	40.4	59.6
Use e-mail, not websites	52.7	47.3
Use websites, not e-mail	50.0	50.0
Use websites and e-mail	71.0	29.0

$\chi^2 (3) = 19.73, p < .001$

A greater percentage of part-time faculty (59.6%) used neither websites or email than full-time faculty (40.4%). In contrast, a greater percentage of full-time faculty (71.0%) used both websites and e-mail than part-time faculty (29.0%). The results of the chi-square test for independence used to determine if an association existed between the technology index and employment status were statistically significant,  $\chi^2 (3) = 19.73, p < .001$ . These findings provided support that a statistically significant association existed between the technology index and employment status.

The percentage of participants who used websites for instructional duties was crosstabulated by employment status. The results of this analysis are presented in Table 21.

Table 21: Crosstabulation – Use of Websites for Instructional Duties and Employment

Status

Use of Websites for Instructional Purposes	Employment Status	
	Full-time	Part-time
No website	47.7	52.3
Website	69.2	30.8

$\chi^2 (1) = 9.52, p = .002$

The greater percentage of full-time faculty (69.2%) indicated they used websites for instructional duties. Part-time faculty (52.3%) indicated that they did not use websites for instructional purposes. The chi-square test for independence used to examine the association between the use of websites for instructional purposes and employment status was statistically significant,  $\chi^2 (1) = 9.52, p = .002$ . Based on this finding, an association existed between use of a website for instructional duties by employment status.

In summary, three of the findings for the five technology items by employment status were statistically significant. Based on these findings, it appears that the null hypothesis was partially rejected. Full-time faculty appear to use technology to a greater extent than do part-time faculty.

Research Question 5: Is there a relationship between faculty principal field of teaching and faculty use of technology in postsecondary education?

Hypothesis 5: There is no statistically significant relationship between faculty principal field of teaching and faculty use of technology in postsecondary education.

The percentage of hours per week spent e-mailing students was crosstabulated by the principal field of teaching, vocational included. The results of this analysis are presented in Table 22.

Table 22: Crosstabulation – Number of Hours Spent Emailing Students and Principal Field of Teaching, Vocational Included

Principal Field of Teaching/ Vocational Included	<u>Hours Per Week: E-mailing</u>				
	1 to 5	6 to 10	11 to 15	16 to 20	21 to 25
No principal field of teaching	0.0	0.0	0.0	0.0	0.0
Business, law, and communications	12.8	13.9	11.9	14.6	11.3
Health sciences	9.6	9.9	5.3	15.5	14.5
Humanities	15.5	15.9	13.0	14.5	6.2
Natural sciences and engineering	25.6	20.2	22.6	16.0	27.9
Social sciences and education	19.4	25.0	31.3	28.0	29.3
Occupationally specific programs	3.9	3.6	2.4	1.9	3.8
All other programs	13.5	11.5	13.5	9.4	7.0

$$\chi^2 (24) = 22.63, p = .542$$

The percentages of hours per week spent e-mailing students was similar across the principal fields of teaching, vocational included. The results of the chi-square tests for independence used to test the association between the hours per week e-mailing students and principal field of teaching were not statistically significant,  $\chi^2 (24) = 22.63, p = .542$ . Based on this finding, it appears that the two variables are not associated.

The percentage of responses regarding satisfaction with equipment/facilities was crosstabulated by principal field of teaching, vocational included. Table 23 presents results of this analysis.

Table 23: Crosstabulation – Satisfaction with Equipment/Facilities and Principal Field of Teaching, Vocational Included

Principal Field of Teaching/ Vocational Included	Satisfaction with Equipment/Facilities			
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
No principal field of teaching	0.0	0.0	0.0	0.0
Business, law, and communications	13.2	10.8	10.5	7.9
Health sciences	12.7	12.9	11.6	8.9
Humanities	14.1	14.6	13.7	14.2
Natural sciences and engineering	23.6	24.4	23.5	20.0
Social sciences and education	19.2	19.2	18.1	18.9
Occupationally specific programs	5.7	5.1	5.0	6.7
All other programs	11.4	13.1	17.8	23.7

$\chi^2 (18) = 8.62, p = .967$

The crosstabulation indicated that faculty within each principal field of teaching, including vocational, had similar levels of satisfaction or dissatisfaction with equipment and facilities. The crosstabulation used to determine if a relationship existed between principal field of teaching and satisfaction with equipment and facilities was not statistically significant,  $\chi^2 (18) = 8.62, p = .967$ . This finding provided support that the two variables were not associated.

The percentage of participants at each level of satisfaction with technology-related activities were crosstabulated with the principal field of teaching, vocational included. Table 24 presents results of this analysis.

Table 24: Crosstabulation – Satisfaction with Technology-Related Activities and Principal Field of Teaching, Vocational Included

Principal Field of Teaching/ Vocational Included	<u>Satisfaction with Technology-Related Activities</u>			
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
No principal field of teaching	0.0	0.0	0.0	0.0
Business, law, and communications	13.2	10.8	10.5	7.9
Health sciences	12.7	12.9	11.6	8.9
Humanities	14.1	14.6	13.7	14.2
Natural sciences and engineering	23.6	24.4	23.5	20.0
Social sciences and education	19.2	19.2	18.1	18.9
Occupationally specific programs	5.7	5.1	5.0	6.7
All other programs	11.4	13.1	17.8	23.7

$$\chi^2 (18) = 1.63, p = .999$$

The percentage of participants in each of the seven principal fields of teaching appeared to be similar in regard to their satisfaction or dissatisfaction with technology-related activities. The results of the crosstabulation used to determine if an association existed between satisfaction with technology-related activities and principal field of teaching were not statistically significant,  $\chi^2 (18) = 1.63, p = .999$ . This finding provided support that satisfaction with technology-related activities was not associated with principal field of teaching, vocational included.

The percentage of participants at each level of the technology index was crosstabulated by the principal field of teaching, vocational included. Results of this analysis are presented in Table 25.



Table 25: Crosstabulation – Satisfaction with Technology Index and Principal Field of Teaching, Vocational Included

Principal Field of Teaching/ Vocational Included	<u>Satisfaction with Technology Index</u>			
	Use neither websites/email	Use email, not websites	Use websites, not email	Use both websites/email
No principal field of teaching	2.8	0.0	0.0	0.0
Business, law, and communications	8.0	11.3	9.6	14.0
Health sciences	20.5	9.9	17.6	9.4
Humanities	10.3	16.8	10.3	14.1
Natural sciences and engineering	19.9	21.6	24.8	28.5
Social sciences and education	14.4	21.0	19.0	19.3
Occupationally specific programs	9.8	4.0	5.4	3.6
All other programs	14.3	15.4	13.3	11.1

$$\chi^2 (18) = 18.80, p = .404$$

For each principal field of teaching, vocational included, the percentages of participants reporting use of websites and e-mail were similar. The chi-square test for independence used to determine if an association existed between the four levels of the technology index and principal field of teaching was not statistically significant,  $\chi^2 (18) = 18.80, p = .404$ . Based on this finding, it appears that the two variables were not related.

The percentages of responses for the use of a website for any instructional duties were crosstabulated by principal field of teaching, vocational included. Table 26 presents results of this analysis.

Table 26: Crosstabulation – Satisfaction with Use of Website for any Instructional Duties and Principal Field of Teaching, Vocational Included

Principal Field of Teaching/ Vocational Included	<u>Use of Website for any Instructional Duties</u>	
	No Website	Website
No principal field of teaching	0.0	0.0
Business, law, and communications	10.1	13.7
Health sciences	14.1	10.1
Humanities	14.2	13.8
Natural sciences and engineering	20.9	28.2
Social sciences and education	18.4	19.2
Occupationally specific programs	6.3	3.8
All other programs	15.0	11.3

$\chi^2 (6) = 3.45, p = .751$

Faculty appeared to be similar in regard to the use of websites for any instructional duties. The results of the chi-square test for independence used to test for an association between the use of websites for any instructional duties by the principal field of teaching, vocational included were not statistically significant,  $\chi^2 (6) = 3.45, p = .751$ . This finding provided evidence that principal field of teaching was not associated with the use of websites for any instructional duties.

In summary, the chi-square tests for independence for the five items measuring technology use on the NSOPF:04 by principal field of teaching, vocational included were not statistically significant. The lack of significance provided support for the retention of the null hypotheses.

Research Question 6: Is there a relationship between the type of institution where a faculty member is employed and faculty use of technology in postsecondary education?

Hypothesis 6: There is no statistically significant relationship between the type of institution where a faculty member is employed and faculty use of technology in postsecondary education.

The percentage of faculty who indicated the number of hours per week: e-mailing students were crosstabulated by type of institution (2-year or 4-year). Table 27 presents results of this analysis.

Table 27: Crosstabulation – Number of Hours Spent Emailing Students and Type of Institution

Hours	<u>Type of Institution</u>	
	4-Year	2-Year
1 to 5	73.4	26.8
6 to 10	78.1	21.9
11 to 15	72.0	28.0
16 to 20	75.8	24.4
21 to 25	65.2	34.8

$\chi^2 (4) = 4.79, p = .310$

The faculty members in a four-year were more likely to e-mail students at each of the five different levels of hours per week than faculty members in two-year institutions. The chi-square test for independence used to examine the association between number of hours per week spent e-mailing students and type of institution was not statistically

significant. As a result, it appears that the percentages of faculty members at each level of the hours spent e-mailing students were not associated with the type of institution.

Responses for satisfaction with equipment/facilities were crosstabulated by the type of institution. The results of this analysis are presented in Table 28.

Table 28: Crosstabulation – Satisfaction with Equipment/Facilities and Type of Institution

Satisfaction with Equipment/Facilities	Type of Institution	
	4-Year	2-Year
Very satisfied	65.4	34.5
Somewhat satisfied	70.5	29.5
Somewhat dissatisfied	71.2	28.8
Very dissatisfied	65.2	34.8

$\chi^2 (3) = 1.41, p = .702$

The faculty members in four-year institutions were more likely to be either somewhat satisfied (70.5%) or somewhat dissatisfied (71.2%) with the equipment and facilities. The results of the chi-square test for independence used to determine if an association exists between their satisfaction with equipment and facilities and type of institution was not statistically significant,  $\chi^2 (3) = 1.41, p = .702$ . Based on this lack of statistically significant findings, it appears that satisfaction with equipment and facilities was not associated with type of institution.

The percentage of responses for satisfaction with technology-related activities was crosstabulated by type of institution. Table 29 presents results of this analysis.

Table 29: Crosstabulation – Satisfaction with Technology-Related Activities and Type of Institution

Satisfaction with Technology-Related Activities	Type of Institution	
	4-Year	2-Year
Very satisfied	65.5	34.5
Somewhat satisfied	71.3	28.7
Somewhat dissatisfied	73.3	26.7
Very dissatisfied	70.8	29.2

$\chi^2 (3) = 1.59, p = .661$

The percentages of responses for satisfaction with technology-related activities indicated that faculty in four-year institutions were very satisfied (65.5%) with technology-related activities, with 70.8% indicating they were very dissatisfied with these types of activities. To determine if an association existed between satisfaction with technology-related activities and type of institution, a chi-square test for independence was completed. The results of this analysis were not statistically significant,  $\chi^2 (3) = 1.59, p = .661$ , indicating that the two variables were not associated.

The percentage of faculty members at each level of the technology index was crosstabulated by type of institution. Table 30 presents results of this analysis.

Table 30: Crosstabulation – Technology Index and Type of Institution

Technology Index	<u>Type of Institution</u>	
	4-Year	2-Year
Use neither websites/e-mail	58.2	41.8
Use e-mail, not websites	70.4	29.6
Use websites, not e-mail	58.1	41.9
Use both websites/e-mail	77.0	23.0

$\chi^2 (3) = 11.73, p = .008$

Technology index and type of institution was examined by faculty who used neither websites nor email, those who used one or the other, and those who used both websites and email. The faculty members in four-year institutions (77.0%) were more likely to use both websites/email than those faculty in two-year institutions (23.0%). The results of the chi-square test for independence used to determine if an association existed between the technology index and type of institution was statistically significant,  $\chi^2 (3) = 11.73, p = .008$ . This finding provided support that an association existed between the technology index and type of institution.

The responses to the use of websites for any instructional duties were crosstabulated by type of institution. Table 31 presents results of this analysis.

Table 31: Crosstabulation – Use of Websites for Any Instructional Duties and Type of Institution

Use of Websites for Any Instructional Duties	Type of Institution	
	4-Year	2-Year
No website	65.5	34.5
Website	75.4	24.6

$\chi^2 (1) = 2.35, p = .125$

Faculty members in four-year institutions appeared more likely to use websites for any instructional duties (75.4%) than faculty in two-year institutions (24.6%). The crosstabulation used to determine if an association existed between the use of websites for any instructional duties and type of institution was not statistically significant,  $\chi^2 (1) = 2.35, p = .125$ . This finding provided evidence that no association existed between the use of websites for any instructional duties and type of institution.

In summary, four of the five chi-square tests for independence used to examine the association between technology use by faculty and type of institution were not statistically significant. Based on these findings, the null hypothesis of no association between these variables was retained.

### Conclusion

Based upon these findings, the following observations were made about the faculty participants in this study:

1. Female faculty are more likely than male faculty to spend time (hours per week) emailing students.

2. A relationship exists between employment status and use of technology indexes.
3. A relationship exists between use of website for instructional purposes and employment status.
4. Full-time faculty use technology to a greater extent than do part-time faculty. An association exists between technology index and type of institution.



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

This study was designed to answer six questions concerning faculty use of technology in postsecondary education in relationship to faculty age, gender, academic rank, employment status, principal field of teaching, and type of institution where the faculty member is employed.

Data from the NSOPF:04, conducted by RTI and sponsored by the NCES, which is a nationally representative study that collects data regarding the characteristics, workload, and career paths of full- and part-time postsecondary faculty and instructional staff at public and private, not-for-profit, 2- and 4-year institutions in the United States was used in this study. Conducted previously in 1988, 1993, and 1999, the NSOPF:04 serves as a continuing response to a need for data on faculty and instructional staff. Of the 34,330 eligible sample members, 26,110 (76%) completed the faculty questionnaire (NCES, 2006).

The conclusions and recommendations from the research findings are presented in this chapter. Recommendations are proposed for future discussions among faculty development professionals, higher education administrators, and doctoral student educators. Each research question is presented in order to summarize findings of interest.

## Conclusions

Research Question 1: Is there a relationship between faculty age and faculty use of technology in postsecondary education?

In order to determine if a relationship exist between faculty age and faculty use of technology in postsecondary education five technology variables (number of hours spent emailing students, satisfaction with facilities and equipment, satisfaction with technology-related activities, technology index, and the use of a website for instructional duties) were crosstabulated by faculty age.

Chi-square tests for independence were used to determine if a relationship existed between each of the variables and faculty age. Most of the faculty members, regardless of age, spent more than 10 hours a week emailing students and were generally more likely to be dissatisfied than satisfied with equipment/facilities. Older faculty members made up (31%) of the population and have a higher technology index and appeared to be more satisfied with technology-based activities than younger faculty members. All of the study's participants were just as likely to use or not to use a website for instructional duties. Overall, the results of the five crosstabulations and chi-square analyses were not statistically significant. Based on these findings, the null hypothesis of no relationship between faculty age and faculty use of technology in postsecondary education was retained.

These findings may reflect a sign of the times. For example, use of the internet and email communications is common place in many environments, and has become a common form of communication. These behaviors transcend age and it may stand to reason that faculty use of technology in postsecondary education is a sign of accessibility

and convenience rather than age. These findings are consistent with the belief that faculty use tools that are a comfortable part of their professional environment (i.e., electronic mail, word-processing, the Web), and is not a variable of age. Another possible explanation is the unevenness in age distribution among the population participants. With roughly 24% of the participants age 40 or less, 59% of the participants between 41 – 60, and 17% of the participants age 61 or over, proportionality in relation to levels of significance come into play.

Research Question 2: Is there a relationship between faculty gender and faculty use of technology in postsecondary education?

In order to determine if a relationship existed between faculty gender and faculty use of technology in postsecondary education five technology variables (number of hours spent emailing students, satisfaction with facilities and equipment, satisfaction with technology-related activities, technology index, and the use of a website for instructional duties) were crosstabulated by faculty gender.

Chi-square tests for independence were used to determine if a relationship existed between each of the variables and faculty gender. Female faculty (70.5%) were more likely to spend 21 to 25 hours per week emailing students. In contrast, male faculty members (58.7%) were more likely to spend only 1 to 5 hours a week emailing students. The chi-square test for independence used to examine the association between gender and hours spent emailing students was statistically significant,  $\chi^2(4) = 19.10, p < .001$ . This finding indicated that female faculty members were more likely to spend a greater amount of time emailing students than male faculty members. Spotts' (1997) research

and this researcher's conclusions support the premise that there may be gender differences in the way faculty members use technology, and rate their levels of knowledge or expertise. On a more basic level, these findings may simply reflect communication patterns and styles between males and females. According to Rossetti (1998), language, culture and society play an important role in how men and women communicate, and that females are more likely to reach out (collaboration-oriented) compared to males who are more likely to inform or instruct and negotiate (competition-oriented). If this is indeed the case, then female faculty are consistent with Rossetti's study and may be more likely to engage their students both in and outside the classroom than male faculty. Gender differences in both perception and use of technology indeed are worth further investigation.

Research Question 3: Is there a relationship between faculty academic rank and faculty use of technology in postsecondary education?

In order to determine if a relationship exist between faculty academic rank and faculty use of technology in postsecondary education five technology variables (number of hours spent emailing students, satisfaction with facilities and equipment, satisfaction with technology-related activities, technology index, and the use of a website for instructional duties) were crosstabulated by faculty academic rank.

Chi-square tests for independence were used to determine if a relationship existed between each of the variables and faculty academic rank. The results of the five analyses comparing technology items to academic rank provided no evidence of statistically significant associations. Based on these findings, the null hypothesis of no relationship

between faculty use of technology and academic rank was retained. The lack of significance in faculty academic rank and faculty use of technology may be more a reflection of other variables not measured in this study, i.e., faculty lack of confidence in their ability to use technology in their teaching, lack of institutional support, and that use of technology was not an expectation for teaching at the time of employment. Again, the preponderance of participants in this study were age 41 and above and may reflect more traditional teaching methods than today's academic expectations.

Research Question 4: Is there a relationship between faculty employment status and faculty use of technology in postsecondary education?

In order to determine if a relationship exist between faculty employment status and faculty use of technology in postsecondary education five technology variables (number of hours spent emailing students, satisfaction with facilities and equipment, satisfaction with technology-related activities, technology index, and the use of a website for instructional duties) were crosstabulated by faculty employment status.

Chi-square tests for independence were used to determine if a relationship existed between each of the variables and employment status. A higher percentage of full-time faculty in all areas spent a greater number of hours e-mailing students per week in comparison to part-time faculty. Full-time faculty (84.8%) reported that they spent 16 to 20 hours a week in comparison to part-time faculty who reported (15.2%). The results of the chi-square test for independence used to determine if an association existed between the number of hours per week emailing students and employment status was statistically significant,  $\chi^2 (4) = 18.16, p < .001$ .

A greater percentage of part-time faculty (59.6%) used neither websites nor email more than full-time faculty (40.4%). In contrast, a greater percentage of full-time faculty (71.0%) used both websites and e-mail than part-time faculty (29.0%). The results of the chi-square test for independence used to determine if an association existed between the technology index and employment status were statistically significant,  $\chi^2 (3) = 19.73$ ,  $p < .001$ . These findings provided support that a statistically significant association existed between the technology index and employment status.

These findings are consistent with Warburton, Chen, and Bradburn's study published in 2002, which examined full- and part-time faculty and staff access to and use of e-mail and the Internet. The authors concluded that without exception, full-time faculty reported more access to the Internet and more use of e-mail and course-specific Web sites than did part-time faculty (Warburton et al., 2002). Ironically, a more simplistic explanation may be that full-time faculty have more accessible hours than part-time faculty; or that the technology index is less of an expectation for part-time faculty who generally are on college campuses during their teaching hours. The results of this study however support the researcher's conclusions and validate the need for further research in this area.

Full-time faculty (69.2%) also indicated they used websites for instructional duties. Part-time faculty (52.3%) were less likely to use websites for instructional purposes. The chi-square test for independence used to examine the association between the use of websites for instructional purposes and employment status was statistically significant,  $\chi^2 (1) = 9.52$ ,  $p = .002$ . Based on this finding, an association existed between use of a website for instructional duties by employment status.

In 2001 Harper, Baldwin, Gansneder, and Chronister found that participants whose appointments were oriented largely to instruction potentially showed a greater interest in student-oriented approaches. The researchers hypothesized that non-tenure-track faculty and part-time faculty are more likely to have time to reflect on teaching because of their choice to teach rather than conducting research. This aspect, like other aspects of the study, has interrelationships with other issues that result in complex situations that may not be easy to isolate (Ngabung, 2001).

Full-time faculty appear to be using technology to a greater extent than part-time faculty. For these reasons further research should be conducted in the areas of faculty use of technology and employment status, and delineating distinctions between employment expectations should they exist.

Research Question 5: Is there a relationship between faculty principal field of teaching and faculty use of technology in postsecondary education?

In order to determine if a relationship exist between faculty principal field of teaching and faculty use of technology in postsecondary education five technology variables (number of hours spent emailing students, satisfaction with facilities and equipment, satisfaction with technology-related activities, technology index, and the use of a website for instructional duties) were crosstabulated by principal field of teaching.

Chi-square tests for independence were used to determine if a relationship existed between each of the variables and faculty principal field of teaching. For each of the five technology variables the percentage of participants in each area were similar for each



principal fields of teaching, vocational included with natural sciences and engineering having slightly higher levels and representing a larger segment of the population.

The chi-square tests for independence for the five items measuring technology use on the NSOPF:04 by principal field of teaching, vocational included were not statistically significant. The lack of significance provided support for the retention of the null hypotheses. As previously mentioned, faculty use of technology indeed may be more an indicator of convenience, accessibility, institution expectation, and culture rather than discipline and vocation oriented.

Research Question 6: Is there a relationship between the type of institution where a faculty member is employed and faculty use of technology in postsecondary education?

In order to determine if a relationship exist between type of institution and faculty use of technology in postsecondary education five technology variables (number of hours spent emailing students, satisfaction with facilities and equipment, satisfaction with technology-related activities, technology index, and the use of a website for instructional duties) were crosstabulated by type of institution.

Chi-square tests for independence were used to determine if a relationship existed between each of the variables and type of institution. The faculty members in four-year institutions (77.0%) were more likely to use both websites/email than those in two-year institutions (23.0%). The results of the chi-square test for independence used to determine if an association existed between the technology index and type of institution



was statistically significant,  $\chi^2(3) = 11.73, p = .008$ . This finding provided support that an association existed between the technology index and type of institution.

Institutional characteristics such as type of institution (for example, research university versus liberal arts college) may dictate the instructional orientation of faculty as well as their propensity to use technology. According to Serow, Brawner, and Demery (1999):

No sector within higher education has been more closely linked to the movement away from teaching than the research universities—i.e., the 125 institutions that award large numbers of doctoral degrees and that receive the heaviest volume of external research support (p. 412; see also Carnegie Foundation, 1994).

This highlights the potential for institutional influence on faculty orientation to instruction, suggesting less concern for teaching among faculty in research and doctoral institutions, and greater familiarity with and perhaps application of current trends in teaching among faculty at comprehensive, 2-year, and liberal arts colleges (Ngabung, 2001). Ngabung conclusions differ from that of the researcher's and supports the notion that further research should be done in this area.

This analyses also concluded that faculty at four-year institutions were more likely to spend more time emailing students, use websites for instructional duties and be either somewhat satisfied or somewhat dissatisfied with equipment/facilities. Faculty at two-year institutions were more likely to be satisfied with technology-related activities. Although four-year institutions had high levels in four of these analyses, the results were not statistically significant. Overall, only one of the five analyses comparing faculty use

of technology by type of institution was statistically significant. Based upon these findings the null hypothesis of no relationship was retained.

### Recommendations

Although faculty members in postsecondary education have a range of technology at their disposal, little is known about the factors that may influence or limit their use of technology. Instead, researchers have tended to focus on faculty perceptions of particular instructional technologies (Peluchette & Rust, 2005). This researcher examined whether age, gender, academic rank, employment status, principal field of teaching, and type of institution where a faculty member is employed were related to faculty use of technology in postsecondary education.

Based upon findings from this study, the following recommendations are offered.

1. Further study is needed in the examination of gender and faculty use of technology in postsecondary education. Does this distinction occur because of socialization patterns and culture or because of stereotypes and biases?
2. Further examination is needed on the relationship between faculty employment status and faculty use of technology in postsecondary education. Does the imbalance between employment status and use of technology impact student learning, retention, and more importantly faculty proficiency and development?
3. Further exploration is needed on the type of institution (2-Year vs. 4-Year) in which faculty work and faculty use of technology in postsecondary education. Is there an imbalance in resources, faculty development, and technological equipment or is the distinction due to expectation and perception? With 2-Year

institutions becoming a wave of the future, this finding demands serious consideration.

This researcher was unable to isolate the responses of social work faculty in this study. There is a need for the NSOP: 04 public access data to allow researchers to tease out selected professions and vocations for research purposes. This researcher does, however, support Kreuger and Stretch (2000) conclusion that more research focusing on technology in social work education should be conducted. Padgett & Conceicao-Runlee (2000) offered that social work faculty may be willing to invest time in retooling, but due to extensive institutional obligations may be unable to offer such a time commitment to technological instruction and indexes. It is important to remember that faculty investment can be influenced by both individual motivation and institutional demands on faculty time. Addressing motivational issues, staff support, training, and accessibility are critical to social work faculty's motivation to use technology. For these reasons, more research regarding social work faculty use of technology is needed.

APPENDICES

APPENDIX A  
LEAD LETTER TO FACULTY

LEAD LETTER TO FACULTY

<DATE>

NSOPF:04

Endorsed by

American Association for  
Higher Education

American Association of  
Collegiate Registrars and  
Admissions Officers

American Association of  
Community Colleges

American Association of  
State Colleges and  
Universities

American Association of  
University Professors

American Council on  
Education

American Federation of  
Teachers

Association for Institutional  
Research

Association of American  
Colleges and Universities

Association of Catholic  
Colleges and Universities

Career College Association

The Carnegie Foundation for  
the Advancement of  
Teaching

College and University  
Professional Association for  
Human Resources

The College Board

The College Fund/UNCF

Council of Graduate Schools

The Council of Independent  
Colleges

Hispanic Association of  
Colleges and Universities

National Association of  
College and University  
Business Officers

National Association for  
Equal Opportunity in Higher  
Education

National Association of  
Independent Colleges and  
Universities

National Association of State  
Universities and  
Land-Grant Colleges

National Association of  
Student Financial Aid  
Administrators

National Education  
Association

<FACULTY NAME>  
<ADDR 1>  
<ADDR 2>  
<CITY STATE ZIP>

Dear Colleague,

I am writing to ask you to participate in an important study about postsecondary faculty and instructional staff in the United States. Specifically, I would like you to complete a questionnaire over the Internet about your background and work experiences at <INSTITUTION NAME>. You were selected as part of a nationally representative sample of faculty and instructional staff to take part in the fourth cycle of the National Study of Postsecondary Faculty (NSOPF). RTI International (RTI) of North Carolina is conducting this cycle of the study for the U.S. Department of Education. Your participation, while voluntary, is critical to the study's success. On average, the questionnaire takes about 30 minutes to complete.

Your responses will be secured behind firewalls and will be encrypted during Internet transmission. All identifying information is maintained in a separate file for follow-up purposes only. Your responses may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose, except as required by law. We have enclosed a pamphlet that answers common questions about the study, and contains additional information on laws protecting your confidentiality.

To respond to the questionnaire over the Internet:

- Go to: <https://surveys.nces.ed.gov/nsopf/>
- Type the study ID and password (see below) on the Home/Login page, and
- Press "Enter" or click "Login" to begin the questionnaire.

To respond to the questionnaire by telephone with one of our trained interviewers, or ask questions about the study:

- Call 1-866-NSOPF04 (1-866-676-7304).

If you complete the questionnaire by <DATE>, you may choose to receive either a \$30 check or gift certificate from Amazon.com as a token of our appreciation.

If you have questions or comments regarding the study, you may contact the RTI Project Director, Dr. Maggie Cahalan, at 1-866-676-7304 (e-mail address: [nsopf@rti.org](mailto:nsopf@rti.org)) or the NCES Project Officer, Linda Zimbler, at 1-202-502-7481 (e-mail address: [Linda.Zimbler@ed.gov](mailto:Linda.Zimbler@ed.gov)).

Sincerely,



C. Dennis Carroll, Ph.D.  
Associate Commissioner  
Postsecondary Studies Division

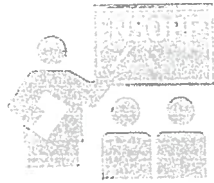
Enclosures

Go to: <https://surveys.nces.ed.gov/nsopf/>

Your study ID:

Your password:

APPENDIX B  
SURVEY QUESTIONNAIRE



National Study of  
Postsecondary Faculty

**NSOPF:04 Faculty Instrument**  
**Full-Scale Study Facsimile**

*Note: The 2004 NSOPF questionnaire was administered as a web-based instrument. This facsimile presents the exact wording of all possible items on the questionnaire. It also indicates which individuals were asked each item, making it possible to identify the skip patterns used in the questionnaire.*

APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

**▶ SECTION A: Nature of Employment****Form:** Q1**Label:** Instructional duties, any**Form Administered To:**

All faculty and instructional staff

**StemWording:**

During the 2003 Fall Term, did you have any instructional duties at [FILL INSTNAME], such as teaching students in one or more credit or noncredit courses, or advising or supervising students' academic activities?

(By instructional duties, we mean teaching credit or noncredit courses, advising or supervising students' academic activities, serving on undergraduate or graduate thesis or dissertation committees, supervising independent study or one-on-one instruction, etc., during the 2003 Fall Term.)

0 = No

1 = Yes

**Form:** Q2**Label:** Instructional duties related to credit courses/activities**Form Administered To:**

Faculty with instructional duties, Fall 2003

**StemWording:**

Did any of your instructional duties include teaching students in **credit** courses, or advising students or supervising students' academic activities for which they received **credit** during the 2003 Fall Term?

0 = No

1 = Yes

**Form:** Q3**Label:** Faculty status**Form Administered To:**

All faculty and instructional staff

**StemWording:**

During the 2003 Fall Term at [FILL INSTNAME], did you have faculty status as defined by that institution?

0 = No

1 = Yes

**Form:** Q3X**Label:** Confirm study ineligibility**Form Administered To:**

Sample members without faculty status and with no instructional duties during the 2003 Fall term



## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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**StemWording:**

Just to confirm, you did not have faculty status and you did not teach any classes, or advise or supervise any students at [FILL INSTNAME] during the 2003 Fall Term?

- 1 = Agree: NOT faculty and DID NOT have any instructional duties  
 2 = Disagree: Had faculty status and/or had instructional duties
- 

**Form:** Q4**Label:** Principal activity**Form Administered To:**

All faculty and instructional staff

**StemWording:**

Was your **principal activity** at [FILL INSTNAME] during the 2003 Fall Term. . .  
 (If you had equal responsibilities, please select one.)

- 1 = Teaching  
 2 = Research  
 3 = Public service  
 4 = Clinical service  
 5 = Administration (e.g., Dean, Chair, Director, etc.)  
 6 = On sabbatical from this institution  
 7 = Other activity (e.g., technical activity such as programmer or technician; other institutional activities such as library services; subsidized performer, artist-in-residence, etc.)
- 

**Form:** Q5**Label:** Employed full or part time at this institution**Form Administered To:**

All faculty and instructional staff

**StemWording:**

During the 2003 Fall Term, did [FILL INSTNAME] consider you to be employed full time or part time?

- 1 = Full time  
 2 = Part time
-



## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

**Form:** Q11                      **Label:** Rank, year attained professor or associate professor  
**Form Administered To:**  
 Faculty and instructional staff who hold the rank of professor or associate professor

**StemWording:**

In what year did you first achieve the rank of [FILL Q10] at **any** institution?

\* Year:

**Form:** Q12                      **Label:** Tenure status

**Form Administered To:**  
 All faculty and instructional staff

**StemWording:**

During the 2003 Fall Term at [FILL INSTNAME], were you . . .

- 1 = Tenured
- 2 = On tenure track but not tenured
- 3 = Not on tenure track
- 4 = Not tenured because institution had no tenure system

**Form:** Q13                      **Label:** Tenure, year attained at any postsecondary institution

**Form Administered To:**  
 Tenured faculty and instructional staff

**StemWording:**

In what year did you first achieve tenure at **any** postsecondary institution?

\* Year:

**Form:** Q14                      **Label:** Union status

**Form Administered To:**  
 All faculty and instructional staff

**StemWording:**

Are you a member of a union or other bargaining association that is legally recognized to represent the faculty at [FILL INSTNAME]?

- 0 = No
- 1 = Yes

**Form:** Q15                      **Label:** Union status, reason not a member

**Form Administered To:**  
 Faculty and instructional staff who are not members of a union

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

**StemWording:**

Is that because a union is not available, you are not eligible to join, or you decided not to join?

- 1 = Don't know
- 1 = Union is not available
- 2 = Union is available, but I am not eligible
- 3 = I am eligible, but I decided not to join

**Form:** Q16VS**Label:** Principal field of teaching-verbatim**Form Administered To:**

All faculty and instructional staff

**StemWording:**

What is your principal field or discipline of teaching at [FILL INSTNAME]?  
 (Enter the name of the principal field or discipline in the box below. This name will be used to match against a list of academic fields, so please be specific and do not use abbreviations or acronyms. If you have no principal field, select the "Not applicable" box.)

- \* Name of principal field/discipline of teaching:
- \* Not applicable (No principal teaching field or discipline)

**Form:** Q16AC**Label:** Principal field of teaching-autocode**Form Administered To:**

Faculty and instructional staff who provided a verbatim field of teaching

**StemWording:**

Please select the code below to confirm your field of teaching: [FILL Q16VS]

**If you do not agree with this code, select "None of these codes" to manually code the field.**

**Autocoding Explanation:** Using the verbatim string of the respondent's teaching field (provided in Q16VS), item Q16AC matches the string to selected categories from the Classification of Instructional Programs (CIP), the federal statistical standard for classifying instructional program. CIP descriptions that match the verbatim string appear on the screen, and the respondent selects the code that best describes the teaching field. (See pages C-28 through C-30 for a list of codes and descriptions) Strings that do not match the CIP descriptions are routed to Q16CD for manual coding. The respondent can also modify the verbatim string and redo the match or manually code the teaching field in Q16CD. (Additional information on CIP can be found at <http://nces.ed.gov/pubs2002/2002165.pdf>.)

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile****Form:** Q16CD**Name:** Q16CD2**Label:** Principal field of teaching-general code**Name:** Q16CD4**Label:** Principal field of teaching-specific code**Form Administered To:**

Faculty and instructional staff who provided a verbatim field of teaching, but whose results were not autocoded

**StemWording:**

Please help us to categorize "[FILL Q16VS]" using the drop-down list boxes.

**(Coding Directions:** Please select a general area and then the specific discipline within the general area. Use the arrow at the right side of the first dropdown box to display the general areas. Click to select the desired general area, and then select the desired specific discipline within the area from the second dropdown box.)

**\* General Area:**

- |   |   |
|---|---|
| 01 = Agriculture/natural resources/related    | 17 = Library science                            |
| 02 = Architecture and related services        | 18 = Mathematics and statistics                 |
| 03 = Area/ethnic/cultural/gender studies      | 19 = Mechanical/repair technologies/techs       |
| 04 = Arts--visual and performing              | 20 = Multi/interdisciplinary studies            |
| 05 = Biological and biomedical sciences       | 21 = Parks/recreation/leisure/fitness studies   |
| 06 = Business/management/marketing/ related   | 22 = Precision production                       |
| 07 = Communication/journalism/comm. Tech      | 23 = Personal and culinary services             |
| 08 = Computer/info sciences/support tech      | 24 = Philosophy, religion & theology            |
| 09 = Construction trades                      | 25 = Physical sciences                          |
| 10 = Education                                | 26 = Psychology                                 |
| 11 = Engineering technologies/technicians     | 27 = Public administration/social services      |
| 12 = English language and literature/letters  | 28 = Science technologies/technicians           |
| 13 = Family/consumer sciences, human sciences | 29 = Security & protective services             |
| 14 = Foreign languages/literature/linguistics | 30 = Social sciences (except psych) and history |
| 15 = Health professions/clinical sciences     | 31 = Transportation & materials moving          |
| 16 = Legal professions and studies            | 32 = Other                                      |

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

## \* Specific Discipline:

0101 = Agriculture and related sciences	1102 = Chemical engineering
0102 = Natural resources and conservation	1103 = Civil engineering
0201 = Architecture and related services	1104 = Computer engineering
0301 = Area/ethnic/cultural/gender studies	1105 = Electrical/electronics/comms engineering
0401 = Art history, criticism & conservation	1106 = Engineering technologies/technicians
0402 = Design & applied arts	1107 = Environmental/environmental health eng
0403 = Drama/theatre arts and stagecraft	1108 = Mechanical engineering
0404 = Fine and studio art	1109 = Engineering, other
0405 = Music, general	1201 = English language and literature/letters
0406 = Music history, literature, and theory	1301 = Family/consumer sciences, human sciences
0407 = Visual and performing arts, other	1401 = Foreign languages/literature/linguistics
0408 = Commercial and advertising art	1501 = Alternative/complementary medicine/sys
0409 = Dance	1502 = Chiropractic
0410 = Film/video and photographic arts	1503 = Clinical/medical lab science/allied
0501 = Biochem/biophysics/molecular biology	1504 = Dental support services/allied
0502 = Botany/plant biology	1505 = Dentistry
0503 = Genetics	1506 = Health & medical administrative services
0504 = Microbiological sciences & immunology	1507 = Allied health and medical assisting services
	1508 = Allied health diagnostic, intervention, treatment professions
0505 = Physiology, pathology & related sciences	1509 = Medicine, including psychiatry
0506 = Zoology/animal biology	1510 = Mental/social health services and allied
0507 = Biological & biomedical sciences, other	1511 = Nursing
0601 = Accounting and related services	1512 = Optometry
0602 = Business admin/management/operations	1513 = Osteopathic medicine/osteopathy
0603 = Business operations support/assistance	1514 = Pharmacy/pharmaceutical sciences/admin
0604 = Finance/financial management services	1515 = Podiatric medicine/podiatry
0605 = Human resources management and svcs	1516 = Public health
0606 = Marketing	1517 = Rehabilitation & therapeutic professions
0607 = Business/mgt/marketing/related, other	1518 = Veterinary medicine
0608 = Management information systems/services	1519 = Health /related clinical services, other
0701 = Communication/journalism/related pgms	
0702 = Communication technologies/technicians and support services	1601 = Law
0801 = Computer/info tech administration/mgmt	1602 = Legal support services
0802 = Computer programming	1603 = Legal professions and studies, other
0803 = Computer science	1701 = Library science
0804 = Computer software and media applications	1801 = Mathematics
0805 = Computer systems analysis	1802 = Statistics
0806 = Computer systems networking/telecomm	1901 = Mechanical/repair technologies/techs
0807 = Data entry/microcomputer applications	2001 = Multi/interdisciplinary studies
0808 = Data processing	2101 = Parks, recreation and leisure studies
0809 = Information science/studies	2102 = Health and physical education/fitness
0810 = Computer/info sci/support svcs, other	2201 = Precision production
0901 = Construction trades	2301 = Culinary arts and related services
1001 = Curriculum and instruction	2302 = Personal and culinary services
1002 = Educational administration/supervision	2401 = Philosophy
1003 = Educational/instructional media design	2402 = Religion/religious studies
1004 = Special education and teaching	2403 = Theology and religious vocations
1005 = Student counselling/personnel services	2501 = Astronomy & astrophysics
1006 = Education, other	2502 = Atmospheric sciences and meteorology
1007 = Early childhood education and teaching	2503 = Chemistry
1008 = Elementary education and teaching	2504 = Geological & earth sciences/geosciences
1009 = Secondary education and teaching	2505 = Physics
1010 = Adult and continuing education/teaching	2506 = Physical sciences, other
1011 = Teacher ed: specific levels, other	2601 = Behavioral psychology
1012 = Teacher ed: specific subject areas	2601 = Behavioral psychology
1013 = Bilingual & multicultural education	2602 = Clinical psychology
1014 = Ed assessment	2603 = Education/school psychology
1015 = Higher education	2604 = Psychology, other
1101 = Biomedical/medical engineering	2701 = Public administration

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

(Specific discipline continued)

2702 = Social work	3004 = Demography & population studies
2703 = Public administration & social svcs other	3005 = Economics
2801 = Science technologies/technicians	3006 = Geography & cartography
2901 = Corrections	3007 = History
2902 = Criminal justice	3008 = International relations & affairs
2903 = Fire protection	3009 = Political science and government
2904 = Police science	3010 = Sociology
2905 = Security and protective services, other	3011 = Urban studies/affairs
3001 = Anthropology (except psychology)	3012 = Social sciences, other
3002 = Archeology	3101 = Transportation & materials moving
3003 = Criminology	3201 = Other

**► SECTION B: Academic/Professional Background**

Form: Q17a1                      Label: Highest degree

Form Administered To:  
All faculty and instructional staff**StemWording:**

What is the highest degree you have completed? Do not include honorary degrees.

(If you have none of the degrees or awards, select "Not applicable.")

- 0 = Not applicable (Do not hold a degree)
- 1 = Doctoral degree (Ph.D., Ed.D., etc.)
- 2 = First-professional degree (M.D., D.O., D.D.S. or D.M.D., LL.B., J.D., D.C. or D.C.M., Pharm.D., Pod.D. or D.P., D.V.M., O.D., M.Div. or H.H.L. or B.D.)
- 3 = Master of Fine Arts, Master of Social Work (M.F.A., M.S.W.)
- 4 = Other master's degree (M.A., M.S., M.B.A, M.Ed., etc.)
- 5 = Bachelor's degree (B.A., A.B., B.S., etc.)
- 6 = Associate's degree or equivalent (A.A., A.S., etc.)
- 7 = Certificate or diploma for completion of undergraduate program (other than associate's or bachelor's)

Form: Q17a1b                      Label: Hold PhD in addition to professional degree

Form Administered To:  
Faculty and instructional staff whose highest degree is a first-professional degree**StemWording:**

Do you also hold a Ph.D. or other doctorate?

- 0 = No
- 1 = Yes

Form: Q17a2                      Label: Highest degree date awarded

Form Administered To:

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

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 Faculty and instructional staff who hold a degree
**StemWording:**

In what year did you receive your [FILL Q17A1 or Q17A1B]?

(If you have more than one degree at the same level, please select the most recent degree.)

\* Year received:

---

**Form:** Q17a3VS
**Label:** Highest degree field-verbatim**Form Administered To:**

Faculty and instructional staff who hold a degree

**StemWording:**

In what field or discipline was your [FILL Q17A1 or Q17A1B]?

(Enter the name of your degree field or discipline. This name will be used to match against a list of academic fields, so please be specific and do not use abbreviations or acronyms.)

---

**Form:** Q17a3AC
**Label:** Highest degree field-autocode**Form Administered To:**

Faculty and instructional staff who provided a verbatim highest degree field

**StemWording:**

Please select the appropriate code for your [FILL Q17A1 or Q17A1B] field: [FILL Q17a3VS]. If you do not agree with these codes, select "None of these codes" to manually code the field.

**Autocoding Explanation:** Using the verbatim string of the respondent's highest degree field (provided in Q17A3VS), item Q17A3AC matches the string to selected CIP categories (see pages C-28 through C-30 for a list of codes and descriptions). Descriptions that match the verbatim string appear on the screen, and the respondent selects the code that best describes the degree field. Strings that do not match the CIP descriptions are routed to Q17A3CD for manual coding. (The respondent can also modify the verbatim string and redo the match or manually code the teaching field in Q17A3CD.)

---

**Form:** Q17a3CD
**Name:** Q17a3C2**Label:** Highest degree field-general code**Name:** Q17a3C4**Label:** Highest degree field-specific code**Form Administered To:**

Faculty and instructional staff who provided a verbatim highest degree field, but whose results were not autocoded

**StemWording:**

Please help us categorize "[FILL Q17a3VS]" using the drop-down list boxes below.

[IF Q16CD ≥ 0]

(Select one from the list of disciplines you've already told us about:)



## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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[ENDIF]

**(Coding Directions:** Please select a general area and then the specific discipline within the general area. Use the arrow at the right side of the first dropdown box to display the general areas. Click to select the desired general area, and then select the desired specific discipline within the area from the second dropdown box.)

\* General Area:

\* Specific Discipline:

**Note:** Please refer to the complete list of instructional program codes on pages C-28 through C-30.

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Form: Q17a4

Name: Q17a4ST

Label: Highest degree institution-state

Name: Q17a4C

Label: Highest degree institution-city

Name: Q17a4N

Label: Highest degree institution-name

Name: Q17a4I

Label: Highest degree institution-IPEDS

**Form Administered To:**

Faculty and instructional staff who hold a degree

**Stem Wording:**

Please help us code the postsecondary institution that awarded your [FILL Q17A1 or Q17A1B] by providing the state and city in which it was located.

**(Steps:**

1. Please select the state in which the school was located. If the school was located in another country, select "foreign country."
2. Enter the name of the city in which the institution was located. You can also use the "Browse" link to identify the city.
3. Select the "Continue" button to list the schools located in that state and city.
4. Select the desired school.

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

**Problems?** Try searching for the school by state without listing a city. If you still can't find the school, select the "Unable To Find School in List" button at the bottom of the search results.)

## \* State/Foreign:

1 = Alabama	21 = Maryland	41 = South Carolina
2 = Alaska	22 = Massachusetts	42 = South Dakota
3 = Arizona	23 = Michigan	43 = Tennessee
4 = Arkansas	24 = Minnesota	44 = Texas
5 = California	25 = Mississippi	45 = Utah
6 = Colorado	26 = Missouri	46 = Vermont
7 = Connecticut	27 = Montana	47 = Virginia
8 = Delaware	28 = Nebraska	48 = Washington
9 = District of Columbia	29 = Nevada	49 = West Virginia
10 = Florida	30 = New Hampshire	50 = Wisconsin
11 = Georgia	31 = New Jersey	51 = Wyoming
12 = Hawaii	32 = New Mexico	52 = Puerto Rico
13 = Idaho	33 = New York	54 = American Samoa
14 = Illinois	34 = North Carolina	55 = Guam
15 = Indiana	35 = North Dakota	56 = Federated States of Micronesia
16 = Iowa	36 = Ohio	57 = Marshall Islands
17 = Kansas	37 = Oklahoma	58 = Northern Mariana Islands
18 = Kentucky	38 = Oregon	59 = Palau
19 = Louisiana	39 = Pennsylvania	60 = U.S. Virgin Islands
20 = Maine	40 = Rhode Island	63 = Foreign Country

## \* City:

## \* School Name:

Form: Q17d1

Label: Bachelor's degree date awarded

**Form Administered To:**

Faculty and instructional staff who reported their highest degree as master's level or above

**StemWording:**

In what year did you receive your bachelor's degree?

(If you have more than one degree at this level, please select the first degree.)

## \* Year received:

\* Not applicable (Do not hold a bachelor's degree)

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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**Form:** Q18                      **Label:** Other current jobs, number of jobs**Form Administered To:**  
All faculty and instructional staff**StemWording:**While you were employed at [FILL INSTNAME], how many **other** jobs did you hold during the 2003 Fall Term? Please do not consider any outside consulting jobs. (If none, select "0.")

- 0 = 0
  - 1 = 1
  - 2 = 2
  - 3 = 3
  - 4 = 4
  - 5 = 5 or more
- 

**Form:** Q19a1                      **Label:** Other current jobs, full-time employment**Form Administered To:**  
Faculty and instructional staff with other employment (excluding consulting)**StemWording:**

[IF Q18&gt;1]

Were you employed full time at any of these other jobs during the 2003 Fall Term?

[ELSE]

Were you employed full time at this other job during the 2003 Fall Term?

[ENDIF]

- 0 = No
  - 1 = Yes
- 

**Form:** Q19b1                      **Label:** Other current jobs, number in postsecondary instruction**Form Administered To:**  
Faculty and instructional staff with other employment (excluding consulting)**StemWording:**

How many of these other jobs involved instruction at another postsecondary institution during the 2003 Fall Term? (If none, select "0.")

- 0 = 0
  - 1 = 1
  - 2 = 2
  - 3 = 3
  - 4 = 4
  - 5 = 5 or more
- 

**Form:** Q21                              **Label:** First postsecondary job, current job is first

## APPENDIX B

(continued)

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 NSOPF:04 Faculty Instrument Facsimile
 

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**Form Administered To:**  
All faculty and instructional staff

**StemWording:**

Is the job you held at [FILL INSTNAME] during the 2003 Fall Term the first faculty or instructional staff position you have held at a postsecondary institution? Do not include teaching assistant or research assistant positions while you were working on your degree.

0 = No

1 = Yes

---

**Form:** Q23
**Label:** First postsecondary job, year began**Form Administered To:**

Faculty and instructional staff who have worked at another postsecondary institution

**StemWording:**

In what year did you begin your first faculty or instructional staff position at a postsecondary institution?

(Do not include time when you were a teaching or research assistant.)

\* Year:

---

**Form:** Q24
**Label:** First postsecondary job, part or full time**Form Administered To:**

All faculty and instructional staff

**StemWording:**

[IF Q21=1]

When you first started your job at [FILL INSTNAME], were you employed full time or part time?

[ELSE]

Were you employed full time or part time at your **first** faculty or instructional staff position?

[ENDIF]

(Do not consider teaching or research assistant positions.)

1 = Full time

2 = Part time

## APPENDIX B

(continued)

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**NSOPF:04 Faculty Instrument Facsimile**

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**Form:** Q26**Label:** First postsecondary job, tenure status**Form Administered To:**

Faculty and instructional staff whose first job was full-time except if this is their first postsecondary institution position and there is no tenure system at this institution

**StemWording:**

[IF Q21=1]

When you began working at [FILL INSTNAME], was your tenure status. . .

[ELSE]

When you began working at your **first** faculty or instructional staff job at a postsecondary institution, was your tenure status. . .

[ENDIF]

- 1 = Tenured
  - 2 = On tenure track but not tenured
  - 3 = Not on tenure track
  - 4 = Not tenured because institution had no tenure system
- 

**Form:** Q27**Label:** Other jobs, any outside postsecondary since degree**Form Administered To:**

All faculty and instructional staff

**StemWording:**

Since receiving your highest degree, have you held any positions outside of postsecondary institutions?

- 0 = No
  - 1 = Yes
-

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

Form: Q28

Label: Other jobs, sector of previous job

**Form Administered To:**

All faculty and instructional staff

**StemWording:**

Now we would like to know about the job you held prior to starting your current job at [FILL INSTNAME]. Was the job in a . . .

(By "Current Job" we mean the position you held at [FILL INSTNAME] during the 2003 Fall Term.)

- 0 = Not applicable (No job immediately prior to this one)
- 1 = 4- or 2-year postsecondary institution
- 2 = Other educational institution
- 3 = Government (federal, state, local) or military organization
- 4 = Foundation or other nonprofit organization
- 5 = For profit business or industry
- 6 = Other

### ► SECTION C: Instructional Responsibilities and Workload

Form: Q31

Name: Q31a

Label: Hours per week on paid tasks at institution

Name: Q31b

Label: Hours per week on unpaid tasks at institution

Name: Q31c

Label: Hours per week on paid tasks outside of institution

Name: Q31d

Label: Hours per week on unpaid tasks outside of institution

**Form Administered To:**

All faculty and instructional staff

**StemWording:**

This next section of the questionnaire relates to your responsibilities on the job and your workload.

**On average**, how many **hours per week** did you spend at each of the following work activities during the 2003 Fall Term?

(Enter average number of hours. If not sure, give your best estimates. If none, enter "0." If less than one hour, enter ".")

- \* a. All **paid activities** at [FILL INSTNAME] (e.g., teaching, clinical service, class preparation, research, administration)
- \* b. All **unpaid activities** at [FILL INSTNAME] (e.g., club assistance, recruiting, attending institution events)
- \* c. Any other **paid activities outside** [FILL INSTNAME] including consulting, working at other jobs, teaching at other schools
- \* d. Unpaid professional service activities **outside** [FILL INSTNAME] related to your work. (Do not include volunteer work unrelated to your profession.)

Form: Q32

Name: Q32a

Label: Percent time spent on instruction, undergraduate

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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**Name:** Q32b                      **Label:** Percent time spent on instruction, graduate/first-professional  
**Name:** Q32c                      **Label:** Percent time spent on research activities  
**Name:** Q32d                      **Label:** Percent time spent on other unspecified activities

**Form Administered To:**

Faculty and instructional staff who worked at least one hour per week at the target institution

**StemWording:**

[IF Q31A AND Q31B AND Q31C AND Q31D = BLANK]

For the hours you worked during the 2003 Fall Term at [FILL INSTNAME],

[ELSE]

For the [FILL Q31A + Q31B] hours per week you worked during the 2003 Fall Term at [FILL INSTNAME],

[ENDIF]

we would like you to allot this time—using percentages—into four broad categories:

**Instruction with undergraduates, Instruction with graduate and first-professional students, Research, and Other Activities.** (If you are not sure, give your best estimate. The percentages should sum to 100%. If none for a category, enter "0".)

What percentage of your time was spent on. . .

- \* a. **Instructional Activities with Undergraduates**, including teaching and preparing for classes, advising, and supervising students at this institution?
  - \* b. **Instructional Activities with Graduate and First Professional students**, including teaching and preparing for classes, advising, and supervising students at this institution?
  - \* c. **Research Activities**, other forms of scholarship, or grants at this institution?
  - \* d. **All Other Activities** at this institution like administration, professional growth, service, and other activities not related to teaching or research.
-

## APPENDIX B

(continued)

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 NSOPF:04 Faculty Instrument Facsimile
 

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Form: Q35a  
 Name: Q35a1 Label: Number of classes taught, credit  
 Name: Q35a2 Label: Number of classes taught, noncredit

**Form Administered To:**  
 Faculty and instructional staff with instructional duties, Fall 2003

**StemWording:**  
 Next, we would like to ask you about the classes or sections you taught during the 2003 Fall Term at [FILL INSTNAME]. **Please do not include individualized instruction.** Questions about independent study, intern supervision, and one-on-one instruction in performance, clinical, or research settings come later. **(If none, select "no classes.")**

How many. . .

- \* a. Classes/sections **for credit** towards degree did you teach?
- \* b. Classes/sections **not for credit** towards degree did you teach?

(Guidance on Counting Classes)

Count multiple sections of the same course separately. For example, Sociology 101 taught to two different groups of students would count as two classes.

Count lab or discussion sections as part of the same class unless they have separate credits assigned to them. For example, a biology class with lectures, labs, and discussion sections each week counts as one class.)

0 = No classes  
 1 = 1 class  
 .  
 .  
 19 = 19 classes  
 20 = 20 or more classes

---

Form: Q35b  
 Name: Q35b Label: Number of classes taught, remedial  
 Name: Q35c Label: Number of classes taught, distance education

**Form Administered To:**  
 Faculty and instructional staff who taught at least one class

**StemWording:**  
 Of the [FILL Q35A] classes you taught at [FILL INSTNAME] in the 2003 Fall Term,

(By **remedial or developmental classes**, we mean courses in reading, writing, math, or other courses for students lacking the skills necessary to perform college-level work at the level required **by your institution**. Some institutions refer to these courses as compensatory, basic skills, or some other term.)



## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

By **distance education**, we mean classes where students and instructors are separated primarily or exclusively by distance or time.)

- \* a. How many were remedial or developmental classes?
- \* b. How many were taught through distance education, either exclusively or primarily?

0 = No classes  
 1 = 1 class  
 .  
 .  
 .  
 19 = 19 classes  
 20 = 20 or more classes

**Form:** Q36                      **Label:** Teaching assistant in any credit class

**Form Administered To:**

Faculty and instructional staff who taught at least one class for credit

**StemWording:**

[IF Q35A1=1]

Did you have teaching assistants, readers, graders, or lab assistants for the credit class you taught during the 2003 Fall Term at [FILL INSTNAME]?

[ELSE]

Did you have teaching assistants, readers, graders, or lab assistants for any of the credit classes you taught during the 2003 Fall Term at [FILL INSTNAME]?

[ENDIF]

0 = No  
 1 = Yes

**Form:** Q37 (loops for up to 5 classes)

**Name:** Q37a<sub>i</sub> (i = 1 to 5)      **Label:** Number of weeks taught, i-th credit class

**Name:** Q37b<sub>i</sub> (i = 1 to 5)      **Label:** Number of credit hours, i-th class

**Name:** Q37c<sub>i</sub> (i = 1 to 5)      **Label:** Number of hours taught per week, i-th class

**Name:** Q37d<sub>i</sub> (i = 1 to 5)      **Label:** Number of students, i-th class

**Name:** Q37e<sub>i</sub> (i = 1 to 5)      **Label:** Primary level of students, i-th class

**Name:** Q37f<sub>i</sub> (i = 1 to 5)      **Label:** Teaching assistant, i-th class

**Form Administered To:**

Faculty and instructional staff who taught at least one class for credit

**StemWording:**

[IF Q35A1>5]

You reported earlier that you taught [FILL Q35A1] classes for credit during the 2003 Fall Term at [FILL INSTNAME]. We have space for you to describe 5 of these classes. Please describe the ones you feel are most relevant for your instructional activities. We will call them classes A to E.

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

[IF Q35A1 &gt;1 AND Q35A1 ≤ 5]

You reported earlier that you taught [FILL Q35A1] classes for credit during the 2003 Fall Term at [FILL INSTNAME]. Please answer the following questions for each of these classes, we will call A to [FILL B (IF Q35A1=2) OR C (IF Q35A1=3) OR D (IF Q35A1=4) OR E (IF Q35A1=5)].

[IF Q35A1=1]

For the credit class that you reported teaching at [FILL INSTNAME] during the 2003 Fall Term, please answer the following questions.

[ENDIF]

\* a. How many weeks did **you** teach the class?

0      0 weeks

1      1 week

.

.

.

24     24 weeks

25     25 weeks

\* b. How many credits were attached to the class?

\* c. How many hours did **you** teach the class per week?  
(Do not include preparation time.)

\* d. How many students were enrolled in the class?

\* e. Were the students in this class primarily undergraduate, graduate, or first professional (e.g., dental, medical, law, theology)?

1 = Undergraduate

2 = Graduate

3 = First professional

\* f. Did you have a teaching or lab assistant, reader, or grader assigned to this class?

0 = No

1 = Yes

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

<b>Form:</b> Q38	
<b>Name:</b> Q38a	<b>Label:</b> Undergrad class, multiple choice midterm/final exams
<b>Name:</b> Q38b	<b>Label:</b> Undergrad class, essay midterm/final exams
<b>Name:</b> Q38c	<b>Label:</b> Undergrad class, short answer midterm/final exams
<b>Name:</b> Q38d	<b>Label:</b> Undergrad class, term/research papers
<b>Name:</b> Q38e	<b>Label:</b> Undergrad class, multiple drafts of written work
<b>Name:</b> Q38f	<b>Label:</b> Undergrad class, oral presentations
<b>Name:</b> Q38g	<b>Label:</b> Undergrad class, group projects
<b>Name:</b> Q38h	<b>Label:</b> Undergrad class, student evaluations of each others^ work
<b>Name:</b> Q38i	<b>Label:</b> Undergrad class, laboratory/shop/studio assignments
<b>Name:</b> Q38j	<b>Label:</b> Undergrad class, service learn/co-op interactions with business

**Form Administered To:**

Faculty and instructional staff who taught an undergraduate credit class

**Stem Wording:**

[IF Q37EI=1 FOR EXACTLY ONE OF THE Q37EI, WHERE i=1 TO 5 OR

(IF Q32A&gt;0 AND Q32B=0 OR BLANK AND Q35A1=1)]

For the **undergraduate** class you taught for credit during the 2003 Fall Term at [FILL INSTNAME], did you use any of the following?

[ELSE]

For the **undergraduate** classes you taught for credit during the 2003 Fall Term at [FILL INSTNAME], did you use any of the following?

[ENDIF]

Did you use. . .

- \* a. Multiple-choice midterm or final exam?
- \* b. Essay midterm or final exam?
- \* c. Short-answer midterm or final exam?
- \* d. Term/research papers and writing assignments?
- \* e. Multiple drafts of written work?
- \* f. Oral presentations by students?
- \* g. Group and team projects producing a joint product?
- \* h. Student evaluations of each other's work?
- \* i. Laboratory, shop, or studio assignments?

## APPENDIX B

(continued)

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**NSOPF:04 Faculty Instrument Facsimile**

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- \* j. Service learning, co-op experiences or assignments requiring interactions with the community or business/industry?

1 = Used in all classes  
2 = Used in some classes  
3 = Not used

---

**Form:** Q39

**Label:** Website for any instructional duties

**Form Administered To:**

Faculty and instructional staff who had instructional duties

**StemWording:**

During the 2003 Fall Term at [FILL INSTNAME], did you have one or more web sites for any of your teaching, advising, or other instructional duties?

(Web sites used for instructional duties might include the syllabus, readings, assignments, and practice exams for classes; might enable communication with students via listservs or online forums; and might provide real-time computer-based instruction.)

0 = No  
1 = Yes

---

**Form:** Q41

**Label:** Hours per week, e-mailing students

**Form Administered To:**

Faculty and instructional staff who had instructional duties

**StemWording:**

During the 2003 Fall Term at [FILL INSTNAME], how many hours per week did you spend communicating by e-mail (electronic mail) with your students? (If none, enter "0.")

\* Hours per week:

---

**Form:** Q46

**Label:** Individual instruction, any

**Form Administered To:**

All faculty and instructional staff

**StemWording:**

During the 2003 Fall Term, did you provide individual instruction **for credit** to any student at [FILL INSTNAME]? By individual instruction, we mean independent study, supervising student teachers or interns, and one-on-one instruction like working with students in a clinical or research setting. Do not include dissertation or thesis committee work.

0 = No  
1 = Yes

---

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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**Form:** Q47**Name:** Q47a1**Label:** Individual instruction, number undergraduate students**Name:** Q47a2**Label:** Individual instruction, number graduate students**Name:** Q47a3**Label:** Individual instruction, number first-professional students**Form Administered To:**

Faculty and instructional staff who provided individual instruction to students

**StemWording:**

[IF Q32A&gt;0 AND Q32B=0 OR BLANK]

How many undergraduate students received individual instruction for credit from you during the 2003 Fall Term?

[ELSE]

Of the students who received individual instruction for credit from you during the 2003 Fall Term, how many were . . .

[ENDIF]

(If none, enter "0.")

- \* Undergraduate students
  - \* Graduate students
  - \* First-professional students (e.g., dental, medical, law, theology)
- 

**Form:** Q47b**Name:** Q47b1**Label:** Individual instruction, hours with undergraduates**Name:** Q47b2**Label:** Individual instruction, hours with graduate students**Name:** Q47b3**Label:** Individual instruction, hours with first-professional students**Form Administered To:**

Faculty and instructional staff who provided individual instruction to undergraduate, graduate, or first-professional students

**StemWording:**Of the students who received individual instruction for credit from you during the 2003 Fall Term, what was the **total number of hours** you spent each week with your. . .

(If less than one hour, enter "1.")

- \* Undergraduate students
  - \* Graduate students
  - \* First-professional students
-

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

Form: Q48	
Name: Q48	Label: Hours per week, thesis/dissertation committees
Name: Q49	Label: Hours per week, administrative committees
Name: Q50	Label: Hours per week, with advisees
Name: Q51	Label: Hours per week, office hours

**Form Administered To:**  
All faculty and instructional staff

**StemWording:**

The next items ask about the average number of hours each week during the 2003 Fall Term at [FILL INSTNAME] that you did the following activities.

(If none, enter "0." If less than one hour, enter "1." If not sure, give your best estimate.)

How many hours per week did you spend. . .

- \* On undergraduate and graduate thesis or dissertation committees, comprehensive exams or orals committees, or examination or certification committees?
- \* On administrative committee work? Please include curriculum, personnel, governance, and other committees at the department, division, institution, and system levels.
- \* With students you were assigned to advise? (Do not include hours spent working with students on their theses, dissertations, or independent studies.)
- \* In regularly scheduled office hours in person or online?

### ► SECTION D: Scholarly Activities

Form: Q52a	
Name: Q52aa	Label: Career articles, refereed journals
Name: Q52ab	Label: Career articles, nonrefereed journals
Name: Q52ac	Label: Career book reviews, chapters, creative works
Name: Q52ad	Label: Career books, textbooks, reports
Name: Q52ae	Label: Career presentations
Name: Q52af	Label: Career exhibitions, performances
Name: Q52ag	Label: Career patents, computer software

**Form Administered To:**  
All faculty and instructional staff

**StemWording:**

Next, we would like to consider your scholarly activities. During your entire career, how many of the following have you completed?

(If not sure, give your best estimates.)

- \* Articles published in **refereed** professional or trade journals; or creative works published in juried media?
- \* Articles published in **nonrefereed** professional or trade journals; or creative works published in **nonjuried** media or in-house newsletters?

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

- 
- \* Published reviews of books, articles, or creative works; or chapters in edited volumes?
  - \* Textbooks, other books; monographs; research or technical reports disseminated internally or to clients?
  - \* Presentations at conferences, workshops, etc.?
  - \* Exhibitions or performances in the fine or applied arts?
  - \* Patents and computer software products?

(For publications, include only works that have been accepted for publication. Count multiple publications/presentations of the same work only once. Include electronic publications that are not published elsewhere in the appropriate categories.)

---

<b>Form:</b> Q52b	
<b>Name:</b> Q52ba	<b>Label:</b> Recent articles, refereed journals
<b>Name:</b> Q52bb	<b>Label:</b> Recent articles, nonrefereed journals
<b>Name:</b> Q52bc	<b>Label:</b> Recent book reviews, chapters, creative works
<b>Name:</b> Q52bd	<b>Label:</b> Recent books, textbooks, reports
<b>Name:</b> Q52be	<b>Label:</b> Recent presentations
<b>Name:</b> Q52bf	<b>Label:</b> Recent exhibitions, performances
<b>Name:</b> Q52bg	<b>Label:</b> Recent patents, computer software

**Form Administered To:**

Faculty and instructional staff who have presented or published during their career

**Stem Wording:**

We would like to consider the level of your scholarly activities during the last **two years**.

- \* Of the [FILL Q52aa] articles or creative works published in refereed journals or juried media in your career, how many were done in the last two years?
- \* Of the [FILL Q52ab] articles or creative works published in nonrefereed journals or nonjuried media in your career, how many were done in the last two years?
- \* Of the [FILL Q52AC] reviews of books, articles, or creative works; chapters in edited volumes published in your career, how many were in the last two years?
- \* Of the [FILL Q52AD] textbooks, other books; monographs; and client reports you published during your career, how many were done in the last two years?
- \* Of the [FILL Q52ae] presentations you made at conferences or workshops in your career, how many were made in the last two years?
- \* Of your [FILL Q52af] career exhibitions or performances, how many were in the last two years?
- \* Of your [FILL Q52ag] career patents, software products, or other works, how many were done in the last two years?

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

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**Form:** Q53**Label:** Scholarly activity, any**Form Administered To:**

All faculty and instructional staff

**StemWording:**Do you have any scholarly activities such as research, proposal development, creative writing, or other creative works in the 2003–04 **academic year**?

0 = No

1 = Yes

---

---

**Form:** Q54VS**Label:** Scholarly activity, principal field-verbatim**Form Administered To:**

Faculty and instructional staff who have scholarly activities and did not provide principal field of teaching (Q16VS)

**StemWording:**

What is your principal field or discipline of scholarly activity?

(Enter the name of your principal field/discipline of scholarly activity. This name will be used to match against a list of academic fields, so please be specific and do not use abbreviations or acronyms.)

\* Name of principal field/discipline of scholarly activity:



## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile****Form:** Q54AC**Label:** Principal field of scholarly activity-autocode**Form Administered To:**

Faculty and instructional staff who provided a verbatim field of scholarly activity

**StemWording:**Please select the appropriate code for your field of scholarly activity: **[FILL Q54VS]**.

If you do not agree with these codes, select "None of these codes" to manually code the field.

**Autocoding Explanation:** Using the verbatim string of the respondent's field of scholarly activity (provided in Q54VS), item Q54AC matches the string to selected CIP categories (see pages C-28 through C-30 for a list of codes and descriptions). Descriptions that match the verbatim string appear on the screen, and the respondent selects the code that best describes the field. Strings that do not match the CIP descriptions are routed to Q54CD for manual coding. (The respondent can also modify the verbatim string and redo the match or manually code the scholarly field in Q54CD).

**Form:** Q54CD**Name:** Q54CD2**Label:** Principal research field-general code**Name:** Q54CD4**Label:** Principal research field-specific code**Form Administered To:**

Faculty and instructional staff who provided a verbatim field of scholarly activity, but whose results were not autocoded

**StemWording:**

Please help us to categorize "[FILL Q54VS]" using the drop-down list boxes below.

[IF Q17A3AC ≥ 0]

(Select one from the list of disciplines you've already told us about:)

[ENDIF]

**Coding Directions:** Please select a general area and then the specific discipline within the general area. Use the arrow at the right side of the first dropdown box to display the general areas. Click to select the desired general area, and then select the desired specific discipline within the area from the second dropdown box.)

\* General area:

\* Specific Discipline:

**Note:** Please refer to the complete list of instructional program codes on pages C-28 through C-30.

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

**Form:** Q56                      **Label:** Scholarly activity, description

**Form Administered To:**  
Faculty and instructional staff engaged in scholarly activity

**StemWording:**  
How would you describe your principal scholarly activity during the **2003–04 academic year**? Is it. . .

- 1 = Basic research
- 2 = Applied or policy-oriented research or analysis
- 3 = Literary, performance, or exhibitions
- 4 = Program and curriculum design and development
- 5 = Other

**Form:** Q55                      **Label:** Scholarly activity, any funded

**Form Administered To:**  
Faculty and instructional staff engaged in scholarly activity

**StemWording:**  
During the **2003–04 academic year**, are any of your scholarly activities at [FILL INSTNAME] **funded**? Do not include consulting services and research included as part of your basic salary.

- 0 = No
- 1 = Yes

### ► SECTION E: Job Satisfaction

**Form:** Q61  
**Name:** Q61a                      **Label:** Satisfaction with authority to make decisions  
**Name:** Q61b                      **Label:** Satisfaction with technology-based activities  
**Name:** Q61c                      **Label:** Satisfaction with equipment/facilities  
**Name:** Q61d                      **Label:** Satisfaction with institutional support for teaching improvement  
**Name:** Q62a                      **Label:** Satisfaction with workload  
**Name:** Q62b                      **Label:** Satisfaction with salary  
**Name:** Q62c                      **Label:** Satisfaction with benefits  
**Name:** Q62d                      **Label:** Satisfaction with job overall

**Form Administered To:**  
All faculty and instructional staff with instructional responsibilities (Q61a–Q61d); All faculty and instructional staff (Q62a–Q62d)

**StemWording:**  
[IF Q1=1 OR Q46=1 OR Q48>0 OR Q35A1>0 OR Q35A2>0]  
With regard to your job at [FILL INSTNAME] during the 2003 **Fall Term**, would you say you were very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with. . .

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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[ELSE]

With regard to your job at [FILL INSTNAME], would you say you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied with. . .

[ENDIF]

- \* The authority you had to make decisions about content and methods in your instructional activities
  - \* The institutional support for implementing technology-based instructional activities
  - \* Quality of equipment and facilities available for classroom instruction
  - \* Institutional support for teaching improvement (including grants, release time, and professional development funds)
  - \* Your workload
  - \* Your salary
  - \* The benefits available to you
  - \* Your job at this institution, overall
- 

Form: Q65

Name: Q64

Label: Retired from another position

Name: Q65

Label: Retire from all paid employment, planned age

**Form Administered To:**

All faculty and instructional staff

**StemWording:**

- \* Have you retired from another position?

0 = No

1 = Yes

- \* At what age do you think you are most likely to retire from all paid employment?  
(Enter age or select "Don't know.")

Years of age/Don't know

**► SECTION F: Compensation**

Form: Q66

Name: Q66a

Label: Amount of income from basic salary from institution

Name: Q66b

Label: Amount of income from other income from institution

Name: Q66c

Label: Amount of income from other academic institution

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

<b>Name:</b> Q66d	<b>Label:</b> Amount of income from consulting or freelance work
<b>Name:</b> Q66e	<b>Label:</b> Amount of income from other employment
<b>Name:</b> Q66f	<b>Label:</b> Amount of income from other unspecified sources

**Form Administered To:**  
All faculty and instructional staff

**StemWording:**

We are almost finished. The next questions will be about your compensation and about your background. Your responses to these items—as with all items on this instrument—are voluntary and strictly confidential. They will be used only in statistical summaries.

**For the 2003 calendar year**, please estimate your gross compensation before taxes. Do not include non-monetary compensation.

(Enter dollar amount. If not sure, give your best estimates. If not applicable, enter "0.")

**First, your compensation from [FILL INSTNAME]:**

- a. What is your basic salary during the calendar year from this institution?
- b. How much compensation did you receive from other income from this institution not included in basic salary (e.g., for summer session, overload courses, administration, research, coaching sports, etc.)?

**Next, your compensation from other sources**

- c. How much were you paid for employment at another postsecondary institution?
- d. How much were you paid for outside consulting or freelance work?
- e. How much were you compensated for any other employment besides consulting and another postsecondary institution (e.g., speaking fees and honoraria, self-owned business, legal/medical/psychological services, professional performances/exhibitions)?
- f. How much income did you receive from any other source (e.g., investment income, royalties/commissions, pensions, real estate, loans, alimony, or child support)?

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

**Form:** Q66b                      **Label:** Amount of total individual income (range)  
**Form Administered To:**  
 Faculty and instructional staff who did not complete all compensation item amounts

**StemWording:**

The following ranges may make it easier for you to estimate **your total income from all sources** for the 2003 calendar year.

(Your responses to these items are strictly confidential. They will be used only in statistical summaries.)

- 1 = \$1–24,999
- 2 = \$25,000–49,999
- 3 = \$50,000–74,999
- 4 = \$75,000–99,999
- 5 = \$100,000–149,999
- 6 = \$150,000–199,999
- 7 = \$200,000–300,000
- 8 = More than \$300,000

---

**Form:** Q67                      **Label:** Type of contract, length of unit

**Form Administered To:**  
 All faculty and instructional staff

**StemWording:**

Is your basic salary at [FILL INSTNAME] this academic year based on a 9- or 10-month contract, an 11- or 12-month contract, or some other arrangement?

(Please answer based on the length of your contract and how long you work rather than on the number of months you are paid.)

- 1 = 9- or 10-month contract
- 2 = 11- or 12-month contract
- 3 = Other, for example, by course or credit hour

---

**Form:** Q68                      **Label:** Income paid per course/credit unit or term  
**Form Administered To:**  
 Faculty and instructional staff paid on something other than a 9-, 10-, 11-, or 12-month contract

**StemWording:**

What was the basis of your pay? Was it by . . .

- 1 = Course
- 2 = Credit hour
- 3 = Academic term
- 4 = Other (e.g., per student, hourly rate)

---

**Form:** Q69                      **Label:** Amount of income paid per course/credit unit or term

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

**Form Administered To:**

Faculty and instructional staff paid by course, credit hour, or academic term

**StemWording:**

How much were you paid per [FILL Q68]?

**Form:** Q70a**Label:** Amount of total household income**Form Administered To:**

All faculty and instructional staff

**StemWording:**

[IF RESPONDED TO ALL PARTS OF Q66AA-Q66AF]

You told us before that **your** income from all sources for the 2003 Calendar year was \$[FILL Q66ASUM]. What was your total **household income** before taxes for that same year?[ELSE IF Q66B  $\geq$  1 and Q66B  $\leq$  8]You told us before that **your** income from all sources for the 2003 Calendar year was [FILL Q66B]. What was your total **household income** before taxes for that same year?

[ELSE]

For the 2003 calendar year, what was your total household income before taxes?

[ENDIF]

(By household income, we mean the total income received by all persons, including yourself, residing in the house during the 2003 calendar year, but excluding minors and full-time students. Please include income from employment and from other sources including your spouse or partner, self-employment, interest earnings, alimony or child support, insurance benefits, and pension payments.)

\* Enter amount:

**Form:** Q70b**Label:** Amount of total household income (range)**Form Administered To:**

Faculty and instructional staff who did not provide their household income

**StemWording:**

The following ranges may make it easier for you to report your total household income. Was your income between. . .

(Your responses to these items are strictly confidential. They will be used only in statistical summaries.)

- 1 = Don't know
- 1 = \$1-24,999
- 2 = \$25,000-49,999
- 3 = \$50,000-74,999
- 4 = \$75,000-99,999
- 5 = \$100,000-149,999

## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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6 = \$150,000–199,999  
 7 = \$200,000–300,000  
 8 = More than \$300,000

**► SECTION G: Sociodemographic Characteristics**

**Form:** Q71                      **Label:** Gender

**Form Administered To:**  
 All faculty and instructional staff

**StemWording:**  
 The last few questions ask you to describe yourself and your opinions about your job.  
 Are you . . .

1 = Male  
 2 = Female

---

**Form:** Q72                      **Label:** Age, year of birth

**Form Administered To:**  
 All faculty and instructional staff

**StemWording:**  
 In what year were you born?

\* Enter year:

---

**Form:** Q73                      **Label:** Race/ethnicity, Hispanic/Latino

**Form Administered To:**  
 All faculty and instructional staff

**StemWording:**  
 Are you Hispanic or Latino?

0 = No  
 1 = Yes

---

<b>Form:</b> Q74	
<b>Name:</b> Q74a	<b>Label:</b> Race, American Indian or Alaska Native
<b>Name:</b> Q74b	<b>Label:</b> Race, Asian
<b>Name:</b> Q74c	<b>Label:</b> Race, Black or African American
<b>Name:</b> Q74d	<b>Label:</b> Race, Native Hawaiian or other Pacific Islander
<b>Name:</b> Q74e	<b>Label:</b> Race, White

## APPENDIX B

(continued)

NSOPF:04 Faculty Instrument Facsimile

**Form Administered To:**  
All faculty and instructional staff

**StemWording:**  
Please select **one or more** of the following choices to best describe your race. Are you . . .  
(Select all that apply.)

- \* American Indian or Alaska Native
- \* Asian
- \* Black or African American
- \* Native Hawaiian or Other Pacific Islander
- \* White

0 = No  
1 = Yes

**Form:** Q75                      **Label:** Disability, any

**Form Administered To:**  
All faculty and instructional staff

**StemWording:**  
Do you have a long-lasting condition that substantially limits one or more of your major life activities?

(By this we mean do you have a physical, visual, auditory, mental, emotional, or other disabling condition that limits your ability to see, hear, or speak; to learn, remember, or concentrate; to dress, bathe, or get around the house, or to get to school or around campus.)

0 = No  
1 = Yes

**Form:** Q77                      **Label:** Marital status, fall 2003

**Form Administered To:**  
All faculty and instructional staff

**StemWording:**  
On November 1, 2003, were you . . .

- 1 = Single and never married
- 2 = Married
- 3 = Living with partner or significant other
- 4 = Separated, divorced, or widowed

**Form:** Q79                      **Label:** Dependent children, number



## APPENDIX B

(continued)

**NSOPF:04 Faculty Instrument Facsimile**

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**Form Administered To:**

All faculty and instructional staff

**StemWording:**

How many dependent children do you support?

(A dependent child is a person 24 years old or younger for whom you provide at least half of his/her financial support.)

\* Number of dependent children:

0 = None

1 = 1

2 = 2

.

.

9 = 9

10 = 10 or more dependents

---

**Form:** Q80**Name:** Q80**Label:** Born in United States**Name:** Q81**Label:** Citizenship status**Form Administered To:**

All faculty and instructional staff

**StemWording:**

Were you born in the United States?

0 = No

1 = Yes

Are you a United States citizen?

0 = No

1 = Yes

**► SECTION H: Opinions****Form:** Q82**Name:** Q82a**Label:** Opinion: teaching is rewarded**Name:** Q82b**Label:** Opinion: part-time faculty treated fairly**Name:** Q82c**Label:** Opinion: female faculty treated fairly**Name:** Q82d**Label:** Opinion: racial minorities treated fairly**Form Administered To:**

All faculty and instructional staff

**StemWording:**

## APPENDIX B

(continued)

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**NSOPF:04 Faculty Instrument Facsimile**

Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree that  
at [FILL INSTNAME]. . .

- \* a. Good teaching is rewarded
- \* b. Part-time faculty are treated fairly
- \* c. Female faculty members are treated fairly
- \* d. Faculty who are members of racial or ethnic minorities are treated fairly

1 = Strongly Agree  
2 = Somewhat Agree  
3 = Somewhat Disagree  
4 = Strongly Disagree

---

**Form:** Q83**Label:** Opinion about choosing an academic career again**Form Administered To:**  
All faculty and instructional staff**StemWording:**

Finally, if you had it to do over again, would you still choose an academic career?

0 = No  
1 = Yes

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