

INFORMATION TECHNOLOGY LEARNING IN  
SEXAGENARIAN +: SOCIAL SUPPORTIVE  
INTERACTIONS

by

JACKIE BRODSKY

LAURIE J. BONNICI, COMMITTEE CHAIR

MELISSA P. JOHNSTON  
HEIDI E. JULIEN  
MARY M. MEARES  
CAROL B. MILLS  
PATRICIA A. PARMELEE

A DISSERTATION

Submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Communication and  
Information Sciences  
in the Graduate School of  
The University of Alabama

TUSCALOOSA, ALABAMA

2014

Copyright Jackie Brodsky 2014  
ALL RIGHTS RESERVED

## ABSTRACT

As e-government resources become more mainstream, older adults will require proficiency with information and communication technologies (ICTs) to access online resources. Natural aging processes, with decreased vision, hearing, and dexterity, will continue to make interactions with ICTs such as computers, cell phones, and e-readers problematic. Physiological decline and social isolation often accompanying aging can pose challenges, causing people to seek social support from ICT instructors while learning. The study explores this phenomenon through Social Support Theory (House, 1981), which states that social support is the availability of assistance or caring from other people and the perception of being part of a supportive network. Support is given by four types of interactions between a support provider and a support seeker – emotional, instrumental, informational, and appraisal.

Older adults living in the service area of a local senior center participated in this mixed-methods study. Semi-structured interviews allowed participants to elaborate on ICT instruction experiences and physical disabilities. Participants also sorted index cards containing possible behaviors displayed by ICT instructors into stacks rated by (1) importance and (2) how often sought. Results strongly supported the informational and appraisal support elements of Social Support Theory and showed that older people value and seek such behaviors from ICT instructors. Findings of this study can inform professionals who work with older adults about helpful interactions facilitating the information and communication needs of older adults in their learning to use ICTs.

## DEDICATION

This dissertation is dedicated to my father, Irwin H. Brodsky (1930-1993).

*Dad, I see you smiling.*

## LIST OF ABBREVIATIONS

ADA	Americans with Disabilities Act
ALA	American Library Association
ELAC	Extra-legally ably challenged
HIV/AIDS	Human immunodeficiency virus/acquired immune deficiency syndrome
ICT	Information and communication technology
IRB	Institutional Review Board
LIS	Library and information science
MES	Mobile Experiential Sensory
MLIS	Master of Library and Information Science
VCR	Videocassette recorder

## ACKNOWLEDGMENTS

I am pleased to have this opportunity to thank God for the many blessings I have received during this journey. I would like to thank my mother, Lyn Brodsky; my brothers, Barry and Phil, and their families; and my friends for their support during this process. I am most indebted to Laurie Bonnici, my dissertation chair; I would not have had the opportunity to perform this research if it were not for the trail she blazed. All of the other dissertation committee members, including Melissa Johnston, Heidi Julien, Mary Meares, Carol Mills, and Pat Parmelee, provided invaluable input. A special thank-you goes to Melissa Johnston, for her helpful comments on my method chapter and provision of important references at the eleventh hour. Janet Z. and Rhiannon K. graciously allowed me to recruit participants at their agency. Rosalind Moore and her staff at the UA Office of Graduate Student Services provided a wonderful service with the Dissertation Boot Camps I attended, where the retreat-like atmosphere at the Moundville Archaeological Park and the supportive environment of the Carmichael Hall Rotunda were conducive to hours of distraction-free writing. Special thanks go to my CC&IS Ph.D. program colleagues, especially Anthony Cox and Matt Griffin for listening to me whine, and Muriel K. Wells for providing a second set of eyes to my data.

This research or my success in the doctoral program would not have been possible without the unfailing support of my traveling companion on this journey called life - Diane Luck, who made sure I ate, slept, and laughed enough. Thank you for being there for me.

## CONTENTS

ABSTRACT .....	ii
DEDICATION .....	iii
LIST OF ABBREVIATIONS.....	iv
ACKNOWLEDGMENTS .....	v
LIST OF TABLES .....	xii
LIST OF FIGURES .....	xiii
1. INTRODUCTION .....	1
Introduction to the Problem .....	1
Background of the Problem .....	2
Statement of the Problem.....	5
Research Questions.....	5
Rationale for the Study .....	6
Nature of the Study .....	6
Definition of Terms.....	6
Assumptions.....	8
2. REVIEW OF THE LITERATURE .....	10
Older Adults and ICT Use .....	10
Social Support Theory .....	16
Applications of Social Support Theory.....	17

Social Support Theory in Communication and Information Science .....	18
3. THEORETICAL FRAMEWORK .....	28
Social Support Theory .....	28
Perspectives of Social Support.....	29
<i>Stress and Coping Perspective</i> .....	29
<i>Social Constructionist Perspective</i> .....	29
<i>Relationship Perspective</i> .....	30
Effects of Social Support .....	30
<i>Stress Buffering</i> .....	30
<i>Uncertainty Reduction</i> .....	30
<i>Social Networking</i> .....	31
<i>Perceived and Enacted Social Support</i> .....	31
Functions of Social Support.....	31
<i>Emotional</i> .....	32
<i>Instrumental</i> .....	32
<i>Informational</i> .....	32
<i>Appraisal</i> .....	32
Barriers to Social Support.....	32
<i>Credibility and Influence of Support Providers</i> .....	33
<i>Stigmatizing Attitudes</i> .....	33
<i>Well-Meaning but Unhelpful Enacted Behaviors</i> .....	33
Summary.....	33

Framing the Study in Social Support Theory .....	34
Operationalizing Social Support Theory .....	34
4. METHODS .....	37
Introduction.....	37
Research Questions.....	37
Rationale for the Research Design.....	38
Participants.....	39
Procedures.....	40
Video Analysis.....	40
Interviews.....	42
Card-Sorting Exercises .....	44
Data Analysis .....	48
Video Analysis.....	48
Interviews.....	48
Card-Sorting Exercises .....	51
Methodological Rigor .....	53
Construct Validity .....	53
Internal Validity .....	53
Credibility .....	54
External Validity .....	55
Transferability.....	55
Reliability.....	55
Dependability.....	56

Objectivity.....	56
Analytic Generalization .....	57
Ethical Considerations .....	57
Summary.....	58
5. RESULTS .....	60
Research Questions.....	60
Video Analysis.....	61
Emotional Support .....	62
Instrumental Support.....	63
Informational Support.....	64
Appraisal Support .....	65
Summary .....	66
Participant Demographics and Stories .....	66
Interviews.....	83
Research Question 1 .....	83
Research Question 2 .....	86
Research Question 3 .....	88
Emerging Themes from the Interviews.....	90
ICT Instruction.....	90
<i>ICT Instruction Settings</i> .....	90
<i>Emotions During ICT Learning</i> .....	93
Interest in Future ICT Instruction .....	95

Card-Sorting Exercises .....	96
Research Question 1 .....	96
Research Question 2 .....	99
Think-Alouds .....	102
<i>Emotional</i> .....	102
<i>Instrumental</i> .....	103
<i>Informational</i> .....	105
<i>Appraisal</i> .....	106
<i>Additional Cards</i> .....	107
Summary .....	107
Research Question 1 .....	107
Research Question 2 .....	108
Research Question 3 .....	109
6. DISCUSSION AND CONCLUSIONS .....	110
Summary .....	110
Implications for the Literature .....	112
Implications for Theory .....	114
Implications for Practice .....	115
Implications for LIS Education .....	117
Implications for Human-Computer Interaction for ICT Design .....	117
Limitations of the Study .....	118
Emerging Themes and Future Research .....	121
Conclusion .....	122

REFERENCES .....124

APPENDIX A: IRB CERTIFICATION MATERIALS AND  
INFORMED CONSENT FORM.....141

APPENDIX B: INTERACTIONS OBSERVED IN ICT  
INSTRUCTION VIDEOS .....147

APPENDIX C: INTERVIEW QUESTIONS.....151

APPENDIX D: CARD-SORTING EXERCISES.....153

APPENDIX E: THEMATIC CODEBOOK .....156

APPENDIX F: CHART FOR RECORDING CARD-SORTING  
RESPONSES .....157

## LIST OF TABLES

5-1: Video Analysis of Behaviors.....	61
5-2: Participant Demographics .....	67
5-3: Interview Responses for Research Question 1 (Consider Important).....	84
5-4: Interview Responses for Research Question 2 (Would Seek) .....	87
5-5: Interview Responses for Research Question 3 (Disability impact) .....	89
5-6: Card-Sorting Responses for Research Question 1 (Consider Important).....	96
5-7: Card-Sorting Responses for Research Question 2 (Would Seek) .....	100

## LIST OF FIGURES

4-1: Cards and Boards Used in Card-Sorting Exercises .....	46
--	----

## CHAPTER 1

### INTRODUCTION

*“The spirited horse, which will try to win the race of its own accord,  
will run even faster if encouraged.” – Ovid*

#### **Introduction to the Problem**

Since the advent of the Internet, older adults have been learning to use information and communication technologies (ICTs) to engage in communicative activities such as information seeking and participating in hobbies. Some websites specifically for older adults have been launched, such as SeniorNet, which provides a portal through which older adults can access relevant information and find information about in-person and online classes (Balas, 1989), and AARP, which provides information and discussion forums for adults over 50 regarding personal technology (AARP, 2013; Hilt & Lipschultz, 2006). Research conducted in the area of instruction of older adults in ICT use has found that this instruction plays a role in mitigating social isolation and may provide a source of social support for these individuals. However, most of this research has been conducted through the lenses of other theories and not primarily viewed via a theory of social support. This study aims to view the interactions provided by ICT instruction through a lens of social support theory.

Social support is the provision of physical and emotional comfort. According to Cobb (1976), this results in the recipient feeling like part of a caring community, where assistance of various types is exchanged through social relationships formed within the community. These relationships can provide a “buffer” from bad effects of stressful events. In older adults, these stressful events can include the death of a spouse, serious illness, loss of independence. These

events can lead to social isolation. To mitigate social isolation, instruction in ICT use provides introduction to a portal through which older adults can remain connected to other people and can continue to pursue interests (Glendenning, 1995). Those who perceive that they are receiving social support indicate that they actually feel better under stressful conditions (Cobb, 1976).

Research conducted on instruction of older adults in ICT use has shown that participants perceive increased social interaction through the use of ICTs. These studies have mainly been guided by theories of social interaction (Bradley & Poppen, 2003); practice theory (Harrod 2008); measures of social isolation (Mellor, Firth, & Moore, 2008); social cognitive theory (Wagner, Hassanein, & Head, 2010); and grounded theory (Linton, 2009). Fewer studies have been found that have examined ICT use of older adults through the lens of social support theory (Winter, 2010). However, the literature is lacking in studies examining the types of social support sought by older adults during ICT instruction sessions. An understanding of the types of social support sought will inform those instructing older adults in the use of ICTs in order to provide a more supportive learning environment.

### **Background of the Problem**

Studies conducted on the perceived social support of older adults using ICTs include Harrod (2008), who found that older adults taking computer classes through SeniorNet received positive feedback from family members regarding their new knowledge. This form of social support provided seniors with increased confidence in successfully applying new knowledge of ICTs through a sense of connectedness to family members. These family members held a common interest in computers. Older adult students perceived that their coaches (peer-teachers) also provided emotional support as well as instrumental and informational support. Linton (2009) found in a longitudinal study of older adults using computers in a retirement community

that social support perceived through the use of computers was important, as well as the residents' feeling that they were "keeping up to date" by displaying their computers in their rooms. Mori and Harada (2010) found that older adults living at home with multiple generations, including grandchildren, were more likely to use cell phones than those who lived with only a spouse. Those who lived with grandchildren perceived that they received informational, appraisal support, and emotional support. In studies of homebound older adults (Bradley & Poppen, 2003) and older adults living in a retirement village (Mellor et al., 2008), it was found that Internet use increased perceptions of social support.

One reason for increased perception of social support involves the diversification of social networks, facilitated by ICT use. Granovetter (1973) found that social networks consist of strong and weak ties. Strong ties are made with family and close friends, and weak ties are those made with anyone else. While strong ties provided support, weak ties widened a person's link to different social networks and thus expanded access to information and support. With weak ties consisting of less extensive expectations of reciprocation than strong ties, weak ties have often been turned to for support (Adelman, Parks, & Albrecht, 1987; Froland, Pancoast, Chapman, & Kimboko, 1981; Greenberg, 1980). Weak ties also provide support with the loss of strong ties, such as a spouse's death or a family crisis (Benkel, Wijk, & Molander, 2009; Rands, 1981).

Another reason for increased perception of social support involves the impact of age-related declines in physical and mental well-being. Information seeking can be impeded by declines in physiological abilities (Charness & Boot, 2009). Age-related vision loss, affecting at least one in three people by the age of 65, includes macular degeneration, glaucoma, cataracts, and diabetic retinopathy (King, 2008). Ear and central auditory nervous system changes can affect what is heard as well as how well it is processed (Bean, 2003). Dexterity issues such as

arthritis and peripheral vascular disease may interfere with the ability to hold a book or use a computer keyboard or mouse, and adaptive equipment may be required (Bean & Laven, 2003). Changes in memory and cognition can interfere with the ability to focus, retain new information, comprehend and recall what has been read (Bean, 2003; Charness & Boot, 2009; Machrone, 2001), and process information on a cluttered screen (Given, Ruecker, Simpson, Sadler, & Ruskin, 2007). As well, psychological issues impeding success with information seeking and ICT use can include underconfidence in ability to use equipment (Marquié, Jourdan-Boddaert, & Huet, 2002). ICT instruction for older adults therefore needs to take into account these potential difficulties.

Sherer (1997) found that frail nursing home residents and day care center attendees enjoyed learning to use ICTs and showed improved scores on the Computer Attitude Scale after instruction. Likewise, Xie (2006) found that older adults enjoyed the mental challenge of learning to use ICTs and considered the challenge an important way to maintain an active mind. In the area of health information seeking, Campbell (2009) found that older adults agreed that the high-quality health information they found on the Internet as the result of a health information training program helped them understand their symptoms, conditions, or treatments. They also agreed that information they found on the Internet helped them to change the way they ate or exercised. Other studies have found that instruction in ICT use for health information seeking correlated with older adults taking a more active role in their own healthcare (Campbell & Wabb, 2003; Leung, Ko, Chan, Chi, & Chow, 2007).

While studies have been conducted on ICT instruction for older adults and the age-related physiological declines that impede ICT use, such studies have focused on the perspective of information providers and those who provide ICT instruction who often serve as sources of

social support for older adult learners of ICT (Butcher & Street, 2009; Cohen, 2010; Hickman, Rogers, & Fisk, 2007; Van Gerven, Paas, & Tabbers, 2006). Research suggests a lack of preparation in graduate school programs for information science professionals to deal with ICT users with declining visual, auditory, and tactile/mobility functions (Angell, 2009; Bonnici, Maatta, & Wells, 2009; Bonnici, Maatta, Wells, Brodsky, & Meadows, 2012; Kleiman, 1995; Walling, 2004). To understand the types of social support that older adults seek in this context, however, a departure from navel gazing in the profession is needed by conducting a study that considers the perspectives of older adults.

### **Statement of the Problem**

A gap exists in the literature around self-descriptions of everyday experiences of social support seeking of older adults learning ICTs (Winter, 2010). This study of the self-described experiences of older adults seeking social support while learning to use ICTs will inform those who work or live with older adults who can provide support to older adults learning to use ICTs.

### **Research Questions**

The self-described experiences of older adults seeking social support regarding ICT use were explored by answering the following research questions:

- RQ1: What types of social support do older adults consider important when learning to use ICTs?
- RQ2: What types of social support do older adults seek when learning to use ICTs?
- RQ3: How do older adults perceive the impact of age-related physical disability on social support seeking when learning to use ICTs?

## **Rationale for the Study**

Research on social support has determined that decreased support leads to deleterious effects on health and welfare (Cassel, 1976; Durkheim, 1897/1951; House, 1981). As people age, life changes such as retirement, loss of a spouse or significant others, and health declines lead to social isolation. To mitigate social isolation, senior centers offer programs aimed at enriching the intellectual and social lives of older adults, including instruction in ICT use (Eaton & Salari, 2005). Discovering what types of social supportive interactions older adults seek while learning to use ICTs can inform these programs that provide avenues for increased social connectedness among older adults.

## **Nature of the Study**

According to Creswell (2007), qualitative studies explore the self-described everyday experiences or lived experiences of people and the meanings they ascribe to their experiences. Qualitative methods include collecting data about experiences through in-depth interviews, analyzing the data, and describing the experiences (Creswell, 2007; Moustakas, 1994). This study sought to discover the lived experiences of older adults learning to use ICTs and the types of social support they seek during this experience. This study was performed using qualitative methods to discover the social support that older adults living in the service area of a senior center consider important and would seek during ICT instruction.

## **Definition of Terms**

A conceptual definition of terms used in this study provides insight into how these terms will be examined in the context of older adults learning to use ICTs.

*Emotional support* refers to being loved, trusted, and cared for (House, 1981). This includes empathy of a learner's situation and learning level.

*Instrumental support* refers to the meeting of material needs (House, 1981). This includes provision of equipment and supplies and directly performing tasks that the learner is unable to perform.

*Informational support* refers to advice, suggestions, and information (House, 1981). This includes instruction using analogies, verbal guidance, and answering questions.

*Appraisal support* refers to the receiving of affirmation, feedback, constructive criticism, and social comparison (House, 1981). These include acknowledging prior ICT experience, redirecting from incorrect task performance methods to correct methods, and reassuring learners who perform tasks correctly.

*Older adults* are those individuals age 60 and older, as physical declines and social isolation increase after age 60 (Heisel, Conwell, Pisani, & Duberstein, 2011; Yorston, Kolt, & Rosenkranz, 2012).

*Information and communication technologies (ICTs)* are devices used to store, retrieve, manipulate, transmit, or receive electronic data. Examples include but are not limited to desktop computers, laptop computers, tablet computers, cellular phones, and other handheld devices (personal digital assistants (PDAs) and iPods).

*Perceived social support* is the understood availability of emotional, instrumental, informational, or appraisal support (Cohen & Wills, 1985).

*Received social support* is the actual emotional, instrumental, information, or appraisal support accepted by an individual.

*Sought social support* is the emotional, instrumental, informational, or appraisal support an individual desires to obtain (Krause, 1986).

## **Assumptions**

A qualitative approach was employed, with the assumption that meaning can be found through the lived experience of older adults seeking social support around ICT use (Creswell, 2007). It was also assumed that self-selected participants would be open and honest about their experiences (Holland & Christian, 2009). The following assumptions about the data collection and analysis were also made:

1. The researcher's personal biases will be described and set aside;
2. Participants' experiences will be described; and
3. Descriptions by all participants will be considered to provide insight into the situation (Moustakas, 1994).

In a semi-structured interview, not all questions can be determined beforehand. An interview guide was prepared to gain the lived experiences of older adults seeking social support around ICT use, with probing questions arising as a result of dialogue during the interviews (Moustakas, 1994).

Even though participants were reminded that any quotes included in publications would be attributed to pseudonyms, social desirability could affect their responses. Participants were asked to respond to each question openly and honestly to help provide an accurate assessment of their lived experiences of social support around ICT use.

This study provides a snapshot of older adults seeking social support around ICT use in a study of 20 individuals in the southeastern United States. While a small sample can limit the generalizability of findings to a larger population, Firestone (1993) suggests that findings that are generalized to a broader theory can increase the likelihood of generalization via discovery of patterns by which to test theory. Thus, external validity in a qualitative study is not determined

by statistical generalizability but rather by analytical generalizability, or generalizability to the theory through which the study is examined and future studies can be examined (Yin, 1984).

This chapter provides an introduction to the problem that will be addressed by this study. The following chapter reviews the literature regarding older adults and ICT use and Social Support Theory and identifies the gap in the literature that the current study will address.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### **Introduction to the Review of the Literature**

This chapter begins by reviewing the literature about older adults and ICT use and then provides a comprehensive literature review in Social Support Theory, with application in Communication and Information Sciences. It concludes by identifying the gap in the literature that this study aims to address.

#### **Older Adults and ICT Use**

As people age, many physiological factors serve to impact interactions with ICTs (Asla, Williamson, & Mills, 2006). Age-related vision loss, affecting at least one in three people by the age of 65, includes macular degeneration, glaucoma, cataracts, and diabetic neuropathy (King, 2008). Auditory difficulties also affect at least one in three older adults (National Institute on Deafness and other Communication Disorders (NIDCD), 2010). Ear and central auditory nervous system changes can affect hearing and the processing of auditory signals (Bean, 2003). Dexterity issues such as arthritis, peripheral vascular disease, and stroke affect at least one in five older adults (Centers for Disease Control and Prevention, 2007, 2010; Hallett, 2008). These conditions negatively impact the ability to use a computer keyboard or mouse and typically require adaptive equipment (Bean & Laven, 2003).

The literature revealed that older adults use ICTs to communicate with others through email and social networks, as well as search for information about special interests (Carrol, 2001; Kanayama, 2003; Karahasanović et al., 2009; Land, 2012; Ryu, Kim, & Lee, 2009; Wicks,

2004), online shopping, online banking, and auctions (Blit-Cohen & Litwin, 2004; Hilt & Lipschultz, 2004; Vuori & Holmlund-Rytkönen, 2005). Xie (2006) found that older adults in the U.S. and China considered ICT use important in keeping their minds active. A study conducted in Israel found that frail nursing home residents and day care center attendees enjoyed learning to use ICTs and showed improved scores on the Computer Attitude Scale after instruction (Sherer, 1997).

In order to meet the information needs of older adults, some websites such as AARP (Hilt & Lipschultz, 2006) have been launched specifically geared to the interests of older adults (Alpay et al., 2004; Laurich, 2002; Phang, Sutanto, Kankanhalli, Li, Tan, & Teo, 2006; Russ, 2004). SeniorNet, developed in 1986 as a nonprofit project based at the University of San Francisco, provides a portal through which older adults can access relevant information to suit their needs, and also provides in-person and online classes in many areas of computer technology (Balas, 1989).

Older adults also use the Internet for health information seeking. In a study of low-income minority older adults in Pittsburgh, Campbell (2009) found that those who found high-quality health information on the Internet as the result of a health information training program agreed that the information helped them understand the symptoms, conditions, or treatments in which they were interested. They also agreed that information they found on the Internet helped them to change the way they ate or exercised. As well, the information they found affected the treatments they used for current health conditions, perhaps by clarifying information given to them by physicians, or raising questions for discussion with their physicians. Similarly, Campbell and Wabb (2003) found that as older adults became more proficient with ICT use, computer anxiety also decreased, and they felt they were taking a more active role in their own

healthcare. Leung et al. (2007) noted that older adults' confidence in seeking health information on the Internet was significantly associated with their satisfaction with a health web-navigating training workshop, and a month after the workshop their reported frequency of consulting the Internet for health-related information significantly increased.

Although older adults have increasingly been searching for health information on the Internet, they are not always comfortable using a computer for some tasks, such as pill identification, becoming overwhelmed with cluttered screens and unfamiliarity with the interface's zoom and sort tools. As well, concerns about side effects and drug interaction information lead them to feel better about consulting physicians and pharmacists, rather than a computer, about pills (Given et al., 2007).

To facilitate health information seeking for older adults, some libraries have begun consumer health outreach programs. In a partnership between Texas Woman's University, the Houston Academy of Medicine-Texas Medical Center Library, and several senior centers in the Houston area, the program Partnering with Seniors for Better Health provided Internet search training as well as introduction to health information sites such as MedlinePlus, the National Institutes of Health NIHSeniorHealth, and Go Local (Chu, Huber, Mastel-Smith, & Cesario, 2009). In Yonkers, New York, Westchester Library System reached out to the graduate program in health advocacy at Sarah Lawrence College to form a partnership to implement a Health Advocacy Resource Center to help with specific Medicare questions for older adults and caregivers (Brynko, 2008).

Even with programs such as those mentioned above to help older adults actively engage in ICT use, many older adults do not access the Internet. Research into why older adults state that they have "no interest" in the Internet has revealed that they may have a fear of learning a

new technology, and they felt it was less stigmatizing to have no interest than to not know how to use a computer (Millward, 2003). Underconfidence in their relative abilities to use computers may impede their adoption of computers in their everyday lives (Marquié et al., 2002). Also of concern was dealing with new technology interfaces such as on-screen menus (Machrone, 2001). Finally, perceived lack of access to a computer or the Internet also accounted for non-use (Morris, Goodman, & Brading, 2007).

As older adults reach retirement age in better physical and mental health than in the past, lifelong learning has become a part of many people's post-retirement activities (Butcher & Street, 2009; Chatman, 1991; Field, 2006). Libraries, community centers, and senior centers have been providing learning opportunities to match interests and abilities (Glendenning, 1995). These classes include support services for participants and a slower pace of instruction (Butcher & Street, 2009; Cohen, 2010; Hickman, Rogers, & Fisk, 2007; Van Gerven et al., 2006). Thus, through provision of social support through these activities, marginalization and feelings of obsolescence and worthlessness by older adults can be mitigated when needs, interests, and abilities are considered in training programs in ICTs.

Even with a need for services aimed at older adults, graduate programs in library and information science (LIS) are lacking in courses for future information professionals to address the topic of information users with declining visual, auditory, and tactile/mobility functions (Bonnici et al., 2009; Bonnici et al., 2012; Walling, 2004). Also, Bonnici and Maatta (2010) found that services to people with disabilities were designed for people qualifying for special services under the Americans with Disabilities Act (ADA). Larger than the population qualifying for services under ADA is a growing population of people falling in the gap between having no disability and having a disability qualifying for ADA services. They referred to this

population, which includes people with mild to moderate age-related declining visual, auditory, and mobility/dexterity abilities, as “extra-legally ably challenged” (ELAC) (p. 1) and suggested that LIS professionals be better prepared as part of a general LIS curriculum to serve this population. Kleiman (1995) suggested that degree programs combine courses in LIS, gerontology, and adult education to prepare information professionals to work with older adults. However, a review over a decade later of course syllabi of LIS programs showed an overemphasis on services to children and young adults and a “startling lack of courses intended to prepare students for a future career in geriatric librarianship” (Angell, 2009, p. 30).

Noting American Library Association (ALA) guidelines for information provision to older adults as well as training in technology for self-sufficient library use (Guidelines for Library and Information Services to Older Adults, 2008; Sloan, 2009), public libraries have offered classes in ICT use for older adults to introduce them to online library and information services, help them overcome social isolation, and plan for health changes (Saari, 2009; Smith, 1986; Van Fleet & Antell, 2002). Class participants note a sense of accomplishment and participate in other classes and activities (Bean & Laven, 2003) and perceive a demystification of ICTs (Burwell, 2001; Kull-Poutanen, 2009). Libraries note that barriers to providing this training include lack of knowledgeable staff, lack of funding, inappropriate equipment such as laptops with small screens or mice that cannot be controlled by arthritic hands, and poor instructional methods, such as lessons that proceed at a rapid pace (Kelly & Hibner, 2005). As well, some libraries perceive a lack of need for specialized classes for older adults, preferring instead for their computer classed to be “open to all ages” (Webb, 2003, p. 146).

With staffing and funding shortages, public libraries have had to look to other agencies such as medical libraries, community centers, and senior centers for partnerships and

collaborative efforts to provide ICT instruction to older adults (Bundy, 2005; Cottle, 2008; Nycyk & Redsell, 2006; Schull, 2005; Smith, Knight, & Joines, 2005; Sutton, 2009). These partnerships have created opportunities for lifelong learning and community involvement.

In a study of the fit between learning and physical space in senior centers, Eaton and Salari (2005) noted that the most successful environments were learner centered, where older adults had leadership and volunteer opportunities and were given decision-making capabilities to choose which activities were offered. Shapira, Barak, and Gal (2007) found that courses in computer operation and Internet browsing for older adults attending elder day care centers or living in nursing homes correlated with improved scores in life satisfaction, depression, loneliness, and self-control, contributing to a sense of empowerment. Social supportive benefits included appraisal support (cheerful feedback of people surrounding them) and emotional support (enhanced interpersonal communication through emailing acquaintances and instructors). Similar results were found in studies of ICT instruction programs in retirement homes (Kerico, 2006), with a sense of community building among residents interacting in the classes.

Thus, the literature dealing with older adults learning to use ICTs suggests increased social interactivity as they take advantage of opportunities to learn to use ICTs in the places they live or frequent, whether at home, in nursing or retirement homes, libraries, community centers, or senior centers. Exploration of the types of social support they seek during these experiences would inform those who provide ICT instruction to older adults and others with visual, auditory, and dexterity disabilities facing social isolation.

## **Social Support Theory**

Social Support Theory posits that assistance or caring is available from other people in ways that make the receiver of social support feel loved, cared for, esteemed, valued, and a part of a network of communication (Cobb, 1976). Social Support Theory was formed based on the seminal studies of Durkheim (1897/1951), Barnes (1954), Cassel (1976), and House (1981). Early studies addressing social support date back to Durkheim's research examining suicide rates in the 1890s. Durkheim found that migrant industrial workers with a good social network (i.e., network of supportive people), including church affiliation, tended to have lower suicide rates than those without such networks (Durkheim, 1897/1951).

Barnes (1954) was the first to use the concept of social networks in a scientific context in a study of Bremmes, a fishing community in Norway, where it was noted that social networks had formed like "a set of points some of which are joined by lines" (p 43). In this community, migrant workers had moved away from their families and communities to find work on fishing expeditions that lasted from weeks to months. Although not all of the links formed were supportive, the transiency or temporary nature of the relationships made the situation more tolerable. Barnes found the relationships to have the following qualities: reciprocity (doing things for each other), intensity (togetherness in close quarters), and complexity (perhaps more than one relationship with the same person – friend/co-worker, or friend/supervisor). These social networks made for a more satisfying or at least tolerable work experience.

Emotional satisfaction is not the only benefit of perceiving the availability of social support. In the early to mid-1970s, researchers studied how the social environment contributed to disease outcomes in both humans and animals, such as life-changing events (Nuckolls, Cassel, & Kaplan, 1972) and stressful working and living conditions (Cassel, 1973). According to

Cassel (1976), perceived social support served as a “protective” factor against negative health outcomes, and he proposed that preventive health programs include strengthening patients’ social support systems (p. 112).

The work of Durkheim (1897/1951), Barnes (1954), and Cassel (1973, 1976) attempted to define and determine effects of social support, but until the work of House (1981), studies on social support theory did not attempt to further classify social support into different types of support. House confirmed Cassel’s findings of the protective effects of social support. He also categorized social support into four types: (1) emotional (love, trust, and caring); (2) instrumental (meeting material needs); (3) informational (giving advice, suggestions, and information); and (4) appraisal (providing affirmation, feedback, constructive criticism, and social comparison). Similar to House’s findings in the work atmosphere, Mercer (1985) found through research in the nursing field that pregnant women perceived similar types of social support from friends and family – emotional, physical, informational, and appraisal.

### **Applications of Social Support Theory**

Studies in social support have been conducted in fields such as sociology (Durkheim 1897/1951), medicine (Cassel, 1976), nursing (Mercer, 1985), public health (Johnson & Hall, 1988; Theorell & Karasek, 1996), psychology (Whipple, Lambert, Vermeersch, Smart, Nielsen, & Hawkins, 2003; Zimet, Dahlem, Zimet, & Farley, 1988), social work (Koeske & Koeske, 1989; Lloyd, King, & Chenoweth, 2002), business (Carlson, Kacmar, & Williams, 2000; Greenhaus & Beutell, 1985), and communication and information sciences (Adelman et al., 1987; Eggert, 1987; Freimuth, 1987; Haythornthwaite, 2005; Haythornthwaite & Wellman, 1998; Haythornthwaite, Wellman, & Mantei, 1995).

## **Social Support Theory in Communication and Information Science**

In communication and information science, much social support research is rooted in the social networks that people form and the communication taking place within and between those networks. Eggert (1987) found that within a social network such as a family, coherence is created via communication, which includes instruction, support, self-identity, ideology, and philosophy. Support can be actual or perceived, and information processing and problem solving can be used to select courses of action and coping strategies. Eggert also found that numerous correlational studies showed a positive association between social support occurring in social networks such as families and mental health, when transitioning to parenthood (Bornstein, Putnick, Suwalsky, & Gini, 2006; Cutrona, 1984), reducing environmental stress (Belsky & Pluess, 2009; Holahan, 1983), and marital disruption (Lin, Woelfel, & Light, 1986; Lyngstad & Jalovaara, 2010). Stress-buffering properties of social support enacted within relationships in social networks have been found to improve individual, relational, and community well-being (Goldsmith, 2004). Cohen and Wills (1985), in looking at a number of social support studies in various disciplines, found that perception of available social support had stress-buffering effects and may lead a person to consider a stressful situation as less threatening even if the support is not actually sought or received. As social support is viewed as multiple types occurring at the same time, a better understanding can be gained of how relationships in social networks are linked to well-being (Goldsmith, 2004).

Goldsmith (2004) also differentiated between perceived social support, a recognition that possible social support is available; and enacted social support, the social support that is actually received. While perceived social support can serve as a buffer for stress, enacted support may be

helpful or unhelpful. Someone seeking social support may appear less competent, or have to reveal a stigmatizing condition or undesirable information. A risk of others' negative impressions exists, as well as negative self-evaluations and a perceived "loss of independence, control, and competence" (p. 22). Provision of support may be well meaning, but may be perceived by the recipient as unhelpful and may actually increase stress and worsen physical or psychological problems.

Goldsmith (2004) also found that during the 1980s progress in social support research in communication and information sciences was hindered by diverse conceptualizations and lack of theoretical explanations. Benefits for members of social networks were examined, but different facets of relationships and different types of relationships were not. Around that time, communication and information science researchers began examining how the concept of strong and weak ties affected the types of social support sought and received.

Granovetter (1973) found that social networks consisted of strong and weak ties. Strong ties are made with family and close friends, and weak ties are made with others, with the latter lacking the intimacy and frequency of strong ties (Adelman et al., 1987). Granovetter (1973) found that while strong ties provided support, weak ties were also important because they widened a person's link to different social networks and thus expanded access to information and support.

Building on Granovetter's (1973) work, other research investigating strong and weak ties revealed that due to expectations of mutual reciprocity in strong ties, attempts by close friends and family to provide support to individuals with chronic illnesses correlated with discomfort and anxiety in the intended recipient because the recipient felt he or she could not reciprocate.

Therefore, weak ties were often turned to for support because of less extensive expectations of reciprocation (Adelman et al., 1987; Froland et al., 1981; Greenberg, 1980).

Also, Adelman et al. (1987) found that uncertainty reduction differed in strong and weak ties. While strong ties were bound by similarity and interactions with each other's social networks, weak ties had highly constrained role definitions and understood limits on scope and duration of interaction. At times, weak ties can be preferred when seeking support because some people may not desire strong ties or may not be capable of developing them due to a lack of social or cognitive skills. They also found that perceived anonymity and a reduction in the potential for personal matters to transmit back to a person's strong ties can also lead a person to seek support from weak ties.

Types of weak ties include the following: (1) neighborly, which can provide emotional and instrumental support due to their proximity (Litwak & Szelenyi, 1969; Unger & Wandersman, 1985); (2) "familiar strangers" (Milgram, 1977), referring to those whom a person encounters regularly but does not know by name and they rarely interact (e.g., regular bus or subway commuters), who can provide emergency assistance and also provide a sense of well-being and belonging to a community; (3) strangers together for a short period of time when self-disclosure may occur (such as a on a plane or in a doctor's office waiting room), which can provide a safe place to disclose information that will not get back to one's strong ties (Derlega & Chaikin, 1977); and (4) urban agents, those involved in service roles whose support may be sought. (Kelly, 1964). These include teachers, ministers, bartenders, hairdressers, and cab drivers, who serve to offer both formal and informal support (Adelman et al., 1987).

Weak ties serve several functions in social support: (1) extended access to information, goods, and services; (2) promote social comparison to people who are dissimilar; (3) facilitate

low-risk reduction of high-risk topics; and (4) foster a sense of community (Adelman et al., 1987). This is done in the following ways:

1. Extend access to information, goods, and services. A large number of weak ties provides access to a more extended range of networks, that can provide more information, goods, and services (Parks, 1982; Zhou, Shin, Brass, Choi, & Zhang, 2009; Zimet et al., 1988). For example, clergy, teachers, retail salespeople, bartenders, hairdressers, and lawyers can provide community information (such as local job openings) that a person may not have access to through family and close friends only (Adelman et al., 1987). As well, community hotlines and volunteer organizations can provide access to situation-specific information that cannot be accessed through family and close friends.
2. Promote social comparison with people who are dissimilar. As weak ties depend less on similarity than strong ties, people find they can compare their behavior to others who are not similar and do not have a strong emotional tie, and thus self-esteem can be less damaged by those comparisons (Hakmiller, 1966; Mettee & Smith, 1977; Parks, 1982; Wills, 1983; Thoits, 2011). Self-enhancement can happen by someone counting their blessings with self-comparison to those less fortunate (Taylor, 1982).
3. Facilitate low-risk reduction of high-risk topics. As stated earlier, weak ties are bounded by well-understood role definitions and limits on scope and duration (Adelman et al., 1987; Barnes, 1954; Granovetter, 1973). Therefore, because of the low risk of the relationship (for example, with bartenders and cab drivers) and the ease with which such a relationship can be terminated, high-risk topics can be discussed and support can be sought with a low risk of sensitive information getting back to a support seeker's network of strong ties, such as family and close friends.

4. Foster a sense of community. Since weak links extend one's knowledge beyond the network of strong ties (Granovetter, 1973), weak links provide a sense of identification with the larger community, sharing in others' triumphs and tragedies with the identification of being a friend of a friend. Adelman et al. (1987) also found that weak ties also gave people links with which to promote collective action, such as community betterment and neighborhood watch programs.

Strong ties may get disrupted, such as by the loss of a family member or another personal crisis. During these times, weak ties can provide support (Benkel et al., 2009; Rands, 1981). However, just because a tie is present between two people does not ensure the provision of all types of social support. Therefore, it is important for people to have both strong and weak ties to receive different types of support (Sarason & Sarason, 2009; Walker, Wasserman, & Wellman, 1994).

Based on Granovetter's (1973, 1982) work on strong and weak ties, Haythornthwaite (1996) analyzed the exchange of information between social networks. She found that awareness of routes of information exchange could help information providers to improve information service delivery. As information flows along social network lines, it can flow between social networks and thus between dissimilar groups of people and not just among people with common traits.

Much of Haythornthwaite's work has involved information exchange among social networks in a university atmosphere (Haythornthwaite, 2005; Haythornthwaite & Wellman, 1998; Haythornthwaite et al., 1995). While she stated that weak ties provided links to a wider network of possible information sources, she found in her studies that strong ties between co-workers provided for collaboration, emotional support, and increased social media used for

communication, thus stressing the importance of both strong and weak ties for social support and information exchange.

Along with Haythornthwaite, other researchers in communication and information science have studied social support perceived through the use of various types of online networks, including institutionally supported avenues (e-health systems and university-instituted communication networks including distance education platforms), and more informal networks (social media sites and self-selected communication networks such as virtual communities and the use of cell phones). Studies have been conducted of students transitioning from high school to college and their use of social media. DeAndrea, Ellison, LaRose, Steinfield, and Fiore (2012) found that a formal student-centered social media site increased incoming students' perceptions of a diverse social support network during the first college semester. Likewise, Stutzman (2011) had similar findings with incoming freshmen's use of a formal networking site. Also, connectedness with Facebook "friends" was found to be of benefit to undergraduate students (Ellison, Steinfield, & Lampe, 2007). Connectedness via cell phone use by first-year college students also helped to maintain relationships during the time of transition (McEwen, 2010). Saumure (2010) found that at the graduate level in a library and information science professional program, an online learning environment provided a supportive culture as geographically dispersed students shared professional, academic, and personal information with each other.

Along with studying the transition of college freshmen to a university atmosphere and the navigation of online learning environments, studies in communication and information science have also examined social support perceptions of people in health information-seeking contexts. Uncertainty reduction has been found to play a role in information seeking, as individuals attempt to reduce uncertainty and anxiety by seeking information to gain more mastery or

personal control over their environments (Eyres & MacElveen-Hoehn, 1983 (as cited in Albrecht & Adelman, 1987); Freimuth, 1987). Studies have found that people construct their knowledge about health-related topics from several sources, both internal and external. Internal sources include already collected information organized within to make sense of the world (Dervin, 1976; Johnson, 2009). External sources include interactions with family, friends, and health practitioners, and health messages through media (Freimuth, 1987). Interpersonal support can also occur through the use of cell phones. Campbell and Kelley (2008) found that Alcoholics Anonymous members relied on cell phones for instrumental and recovery-related interactions, using cell phones for social support and to stay connected with other Alcoholics Anonymous members.

Support seekers may find that health professionals have more credibility and influence in information provision, but may be unavailable due to time constraints, or they may tend to use technical jargon that may exacerbate a perceived status difference between support seeker and possible support provider (Waitzkin, 1985). People may also seek support from other people with the same condition, including informal personal encounters and more formalized self-help and volunteer patient groups (Comaroff & Maguire, 1981; Davison, Pennebaker, & Dickerson, 2000; McIntosh, 1974). Various factors can influence possible information providers' motivations to provide information, such as a desire to share information or support others (Oh, 2010). The desire for people with various health conditions to provide health-related support to others has been found to relate to reciprocity. If a possible support provider perceives a supportive social network of his or her own, he or she feels more of a desire to reach out to others with a similar condition (Robinson & Tian, 2009).

Barriers can be faced by those seeking support for health conditions, such as stigmatizing attitudes about certain health conditions, limited local knowledge, and gaps in health care and supportive services (Dervin, 1976; Freimuth, 1987; Veinot, 2009). Veinot's study of HIV/AIDS-related information seeking in rural Canada supported Granovetter's (1973, 1982) work with weak ties, in that emotional and tangible support was received from strong ties (family and friends), whereas informational support was received from weak ties (medical professionals and AIDS service organizations).

In addition to interpersonal sources, studies in communication and information science have found that people also receive support regarding health conditions through formal and informal online networks. Formal e-health systems set up by health care system providers have been found to be sources of support for people newly diagnosed with life-threatening illnesses (Gustafson et al., 2005) and people with chronic illnesses (Robinson, Turner, Levine, & Tian, 2011).

Informal networks of weak ties have also been found to facilitate various types of social support. In a study of messages on an online message board for people with physical disabilities, Braithwaite, Waldron, and Finn (1999) found that the largest percentage of messages offered emotional support (confidentiality, sympathy, understanding and prayers) and informational support (advice and referral to experts). Offers of instrumental support (performance of a direct task such as lending someone an item or accompanying someone on a trip) occurred less often, perhaps due to the mostly anonymous nature of the message board. Similar results were found in a study conducted by Barnfather, Stewart, Magill-Evans, Ray, and Letourneau (2011) of email, chat, and message board communications in a computer-mediated support group for adolescents with cerebral palsy or spina bifida.

Studies have also been conducted of the weak ties created by readers posting comments to health-related blog. Rains and Keating (2011) found that the number of posts made by authors of blogs related to living with a specific health condition and proportion of posts to reader comments were positively associated with perceived social support from blog readers. Igwe (2008) found in a study of Black Americans using blogging to discuss human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) issues that the anonymity of the medium provided a safe place for emotional and other support.

Research in communication and information science has also been conducted on social support perceived by those learning to navigate various types of information and communication technology, including older adults, who may use online means of health information seeking. Harrod (2008) found in a study of senior citizens taking computer classes through SeniorNet that they received positive feedback (appraisal support) and emotional support from family members about learning to use the computer. They perceived that their coaches (peer-teachers) also provided social support as well as technical and instructional support. Linton (2009) found in a longitudinal study of older adults living in a retirement community that socialization occurred both through the computers and around the use of the computers. Social support networks generated through the use of computers was perceived as important, as well as the residents' feeling that they were "keeping up to date" by displaying their computers in their rooms. In a study of older adults' use of cell phones, Mori and Harada (2010) found that participants who lived at home with multiple generations, including grandchildren, were more likely to use cell phones than those who lived with only a spouse. They noted that those who lived with grandchildren perceived that they received informational support (help using the cell phone features), appraisal support (feedback from grandchildren), and emotional support (connecting

with family). In studies of older adults who were homebound (Bradley & Poppen, 2003) or living in a retirement village (Mellor et al., 2008), it was found that Internet use increased their perceptions of social support, including emotional support (connecting with family) and informational support (researching hobbies and interests). Therefore, perceived social support in turn influenced their decisions to use the technology.

While studies have been found describing perceived social support by older adults around technology adoption, few studies have been found in communication and information sciences describing support actually sought by older adults learning to use technology (Wagner et al., 2010). An understanding of the types of support actually sought would inform information providers and those instructing older adults on the use of ICTs as they prepared to provide support needed in an aging population's navigation of these devices. This study aims to address this gap in the literature by examining the types of social supportive interactions that older adults consider important and seek during ICT instruction.

This chapter provided a comprehensive review of the literature on older adults and ICT use as well as social support. It identified a gap in the literature around the social supportive interactions that older adults seek during ICT instruction. The next chapter serves to define Social Support Theory and frame the current study within the theory.

## CHAPTER 3

### THEORETICAL FRAMEWORK

#### **Introduction to the Theoretical Framework**

This chapter provides an examination of Social Support Theory, explains the key concepts used to formulate the theory, and frames the current study within the theory.

#### **Social Support Theory**

Social Support Theory posits that assistance or caring is available from other people, and the recipient of such support feels a part of a supportive network. For the purpose of this study, “social support” is defined as the provision of physical or emotional comfort. This is derived from Cobb’s (1976) definition of social support as information leading a person to believe that he or she is cared for and loved; esteemed and valued; or belongs to a network of communication. The result of social support is that the recipient perceives to be a member of a caring community. In this caring community, assistance of various types is exchanged through social relationships formed within the community. Social support has a powerful influence on an individual and can protect or “buffer” from negative effects of stressful events that impact physical and mental well-being. People with more social support have been found to fare better through severe stressors than those with less. Those who perceive that they are receiving support can report that they actually feel better (Cobb, 1976). This has been evidenced in feeling a sense of empowerment and life satisfaction by older adults when learning a new task such as ICT use (Shapira et al., 2007). In order to frame this study in Social Support Theory, it is important to

first understand the concepts that make up social support. These concepts include perspectives, effects, and functions of social support, as well as barriers to social support.

### **Perspectives of Social Support**

The perspectives of social support include the stress and coping perspective (reducing the effect of stressful life events on health), the social constructionist perspective (constructed social reality based on context), and the relationship perspective (support is part of more generic relationship processes) (Lakey & Cohen, 2000). An explanation of each perspective follows.

#### ***Stress and Coping Perspective***

The stress and coping perspective purports that social support reduces acts as a buffer from stressful life events on a person's health, through the actions of others or the belief that such support is available. According to Cohen and McKay (1984) and Cutrona and Russell (1990), effects of stressors are relieved if the form of assistance matches the need. For example, lending money would be useful for helping to relieve an economic stressor, and companions and confidants would be useful for stress relief in the death of a close friend or relative. However, lending money would not be as useful in the loss of a loved one, and the availability of companions and confidants would not be as useful in relieving an economic demand.

#### ***Social Constructionist Perspective***

The social constructionist perspective views reality, including social support, as social constructions, which are theories and concepts that people perceive about the world reflecting their social context (Lakey & Cohen, 2000). Therefore, there are individual and group differences, with no clear consensus in people's perceptions of what constitutes social supportive actions.

### ***Relationship Perspective***

The relationship perspective attributes social support to other relationship qualities or processes. Views about social environment are interrelated and overlapping, and related to other concepts such as low conflict, companionship, intimacy, and social skills (Lakey & Cohen, 2000). Relationships with these factors fulfill basic biological needs (Cobb, 1976).

### **Effects of Social Support**

It is also necessary to understand the effects of social support. These include stress buffering, uncertainty reduction, and social networking (Lakey & Cohen, 2000). There also may be differences in the effects of perceived and enacted social support.

### ***Stress Buffering***

According to Cohen and Wills (1985) and Barrera (1986), perception of available social support, even if not enacted, has stress-buffering effects. A person may perceive a stressor as less stressful even if support is not actually sought or received. The mere presence of other people may be comforting (Baumeister & Leary, 1995). Stress-buffering effects can depend on a fit between the situational needs and the support offered (Goldsmith, 2004).

### ***Uncertainty Reduction***

Supportive acts and communication serve to reduce a person's perceptions of uncertainty by helping to develop a sense of control over stressful circumstances (Albrecht & Adelman, 1987). In close relationships, uncertainty is reduced through extensive exchanges of personal information and interactions. In weaker social links, uncertainty is reduced through well-defined roles and limits on interactions (Adelman et al., 1987). Information and resources from others minimize the perception of a threat (Eyres & MacElveen-Hoehn, 1983, as cited in Albrecht &

Adelman, 1987). This can result in a person's perception of more mastery and personal control over the environment (Freimuth, 1987).

### ***Social Networking***

Support results in feeling like part of a social network, including having access to information, goods, and services, and a sense of community. This access can be facilitated with weak ties, and people can feel a sense of identification with the larger community (Granovetter, 1973). Because close relationships are often small in number, with overlapping networks, weak ties provide exposure to many more networks of people who can meet these needs (Adelman et al., 1987).

### ***Perceived and Enacted Social Support***

Perceived and enacted social support can have similar effects. Just knowing that someone is available to help can mitigate feelings of helplessness, even if the person is not called upon to help (Barrera, 1986; Bornstein et al., 2006; Cutrona, 1984; Holahan, 1983). However, there can be differences. Enacted behaviors may be well meaning but perceived as unhelpful. This can result in higher levels of stress (Goldsmith, 2004).

### **Functions of Social Support**

Functions of social support refer to types or categories of social support. House (1981) defined these functions as emotional, instrumental, informational, and appraisal support. Cutrona and Suhr (1994) defined social support functions similarly, with five categories: Informational, tangible, emotional, esteem, and social network support.

### ***Emotional***

Emotional support refers to being loved, trusted, and cared for (Cobb, 1976). This includes esteem, affect, trust, concern, listening, companionship, or accompaniment, and includes most specific acts that people report when they refer to someone being “supportive” toward them (Cohen & Wills, 1985; Gottlieb, 1978; House, 1981).

### ***Instrumental***

Instrumental support refers to the meeting of material needs (House, 1981). This includes provision of equipment, supplies, and services, and performing tasks for a person unable to perform them (House, 1981; Krause, 1986).

### ***Informational***

Informational support refers to advice, suggestions, and information (House, 1981). This includes providing guidance, answering questions, and helping people to help themselves (House, 1981; Krause, 1986).

### ***Appraisal***

Appraisal support refers to the receiving of information that is relevant to self-evaluation rather than problem solving (Langford, Bowsher, Maloney, & Lillis, 1997). This includes affirmation, feedback, constructive criticism, and social comparison (House, 1981).

### **Barriers to Social Support**

Barriers to social support include questions of credibility and influence of support providers (Waitzkin, 1985), stigmatizing attitudes about situations requiring support (Dervin, 1976; Freimuth, 1987; Veinot, 2009), and well-meaning but unhelpful enacted behaviors (Goldsmith, 2004).

### ***Credibility and Influence of Support Providers***

Credibility and influence of support providers may inhibit social support giving. For example, class differences in language use, such as between professionals and clients, may present barriers in interaction (Waitzkin, 1985).

### ***Stigmatizing Attitudes***

Support seekers may have stigmatizing attitudes about conditions requiring support, thus inhibiting the effects of support. For example, people may be hesitant to ask for advice about medical conditions because of their perceptions of society's view of their condition (Dervin, 1976; Freimuth, 1987; Goldsmith, 2004; Veinot, 2009).

### ***Well-Meaning but Unhelpful Enacted Behaviors***

Some enacted behaviors may be well meaning but be perceived as unhelpful by someone seeking support. For example, advice may be unwanted or untimely, or perceived as critical or hostile (Goldsmith, 2004).

### **Summary**

Social support can be examined from a variety of perspectives, including stress and coping, social constructivist, and relationship. It can also be examined by considering the effects such as stress buffering, uncertainty reduction, social networking, and perceived versus enacted social support. Barriers to social support include issues with credibility and influence of social support providers, stigmatizing attitudes, and well-meaning but unhelpful enacted behaviors. A functional examination of social support includes investigating the types of social support sought or provided. This study provides a functional view of social support.

### **Framing the Study in Social Support Theory**

This study is framed within a functional view of Social Support Theory (House, 1981). Therefore, it was necessary to identify social supportive interactions demonstrating the four types of social support: Emotional, instrumental, informational, and appraisal. Three hours of videotaped ICT instruction classes were examined through video analysis (Barron & Topping, 2011), and patterns of interaction between instructors and students were discovered demonstrating the four types of social support that instructors provided to students. These included the following:

- Emotional - Gentle tone of voice, gentle touch, humor, patience, acknowledging different learning levels.
- Instrumental - Provision of ICTs for student use, demonstration of tasks for confused students, performance of tasks for confused students.
- Informational – Explanations, analogies, guidance, answers to questions, provision of handouts.
- Appraisal – Acknowledgement and validation of students’ prior experiences with ICTs, guidance from incorrect to correct task performance methods, reassurance when students performed tasks correctly.

### **Operationalizing Social Support Theory**

In order to examine older adults’ self-reported social supportive interaction seeking, operationalization of Social Support Theory concepts into the four interaction types is necessary. Thus, the theoretical concepts of social support theory were operationalized to include the following statements about social supportive interaction types.

- Emotional – Older adults seek empathy from strong and weak ties while learning to use ICTs. This is provided through encouragement via gentle tone of voice, gentle touch, humor, comfort, and understanding and acceptance of their situation.
- Instrumental - Older adults seek demonstrable assistance while learning to use ICTs. This is provided through provision of equipment, demonstration of tasks to mitigate confusion, and performance of tasks for them that they are unable to perform themselves.
- Informational – Older adults seek information and resources while learning to use ICTs. This is provided through explanations, analogies, guidance, and answers to questions they pose.
- Appraisal – Older adults seek feedback while learning to use ICTs. This is provided through acknowledgement and validation of their prior experiences with ICTs, guidance to correct task performance methods, and reassurance that they are performing tasks correctly.

Since the voices of older adults expressing their perspectives on learning to use ICTs are largely absent from the literature on Social Support Theory, the purpose of this study is to contribute to research and practice involving ICT instruction by discovering the social supportive interactions that older adults seek when learning to use ICTs. Thus, Social Support Theory needs to be operationalized into types of behaviors that can be examined in a study, particularly those exhibited by ICT instructors that older adults consider to be helpful in the learning process. These include behaviors exhibiting emotional, instrumental, informational, and appraisal support. This study contributes to the field by exploring types of behaviors of ICT instructors that older adults consider important or seek during ICT instruction and provides a framework for further study.

This chapter has provided a description of Social Support Theory as a lens by which to examine the phenomenon of older adults and their learning to use ICTs. The following chapter discusses the method used in this study, including the research questions, rationale, participants, procedures, data analysis, methodological rigor, and ethical considerations.

## CHAPTER 4

### METHODS

#### **Introduction to the Methods**

According to Mayan (2009), research methods provide a set of procedures outlining data collection strategies, sample size, and data analysis. This chapter examines the methods used to examine the research questions guiding this study. It begins with a review of the research questions and a discussion of the research methods, and concludes with a discussion of methodological rigor and ethical considerations pertinent to the study.

#### **Research Questions**

A gap exists in the literature around self-descriptions of everyday experiences of social support seeking of older adults learning to use ICTs, as well as the testing of Social Support Theory in this context. The self-described experiences of older adults seeking social support while learning to use ICTs were explored by inquiring how the experience of older adults learning to use ICTs supports Social Support Theory. Thus, the following research questions were posed:

- RQ1: What types of social support do older adults consider important when learning to use ICTs?
- RQ2: What types of social support do older adults seek when learning to use ICTs?
- RQ3: How do older adults perceive the impact of age-related physical disability on social support seeking when learning to use ICTs?

The overarching research problem addressed by this study is how Social Support Theory explains the phenomenon of ICT learning in older adults. Additional goals of this study include investigating the impact of physiological disability on social support seeking. Emerging themes related to these research questions will also be discussed.

### **Rationale for the Research Design**

The study performed in this dissertation is designed as an exploratory study. Exploratory studies are performed to satisfy a researcher's curiosity and desire about a topic, to test the feasibility of undertaking more extensive studies, and to develop methods to be employed in further studies (Babbie, 2004). In this study, I defined the research questions, determined the population of interest for the study, identified and specified variables to include in analysis, and considered the methods most appropriate for the research. This was accomplished by performing a thorough review of the literature in the area and determining what was known and what needed to be discovered about the topic (Schutt, 2006). This review suggested that a mixed method study, with multiple data collection methods, would best elicit responses to address the research questions.

Mixed-methods research refers to using two or more research methods in a single study. This can be performed for confirmation of data (comparing data from multiple sources) or completeness of data (providing a richer context for portrayal of phenomena) (Casey & Murphy, 2009). A within-method approach uses two or more qualitative or quantitative procedures, but not both. An across-method approach uses both qualitative and quantitative methods (Denzin, 1989). The use of multiple data collection methods allows the research to benefit from the advantages of both types of data and overcome disadvantages of each method. In this study, interviews, and card-sorting exercises were conducted. The use of both qualitative and

quantitative data collection methods allowed for the collection of personally relevant information as well as more specific information related to the study topic. Use of mixed methods resulted in a richer picture of the topic than would have been obtained using a single method.

### **Participants**

The population for this study was defined as older adults (ages 60 and older) living in the service area of “Seniorland,” a senior citizen service agency in a mid-size city in the southeastern United States. Seniorland has served approximately 3,500 adults over age 60 each year for the past 40 years, with educational and recreational programs in the areas of exercise programs, dance lessons, board games, card games, quilting, health awareness, and holiday celebrations. The initial connection with Seniorland was originated through a formal relationship between an LIS professor and Seniorland. To facilitate a close association with the participants and enhance the validity of the in-depth inquiry of this exploratory study in a naturalistic setting (Crouch & McKenzie, 2006), a small sample of participants was sought. Thus, the goal was to recruit about 20 participants. The participants in the study included 20 older adults (ages 60 and older) living in the county served by Seniorland. Institutional Review Board (IRB) certification was obtained for the study.

Recruiting for the study was attempted by posting notices on two bulletin boards (in the front lobby and in the back of Seniorland by the door of the Nutrition Center). No participants were recruited using this method. It was noted during a visit to Seniorland to view placement of the notices that Seniorland employees had placed the notices near recruiting notices for research studies offering monetary incentives to participate. Thus, a \$5 Walmart gift card was offered to participants as an incentive to participate in the study. The recruiting notices and informed consent form were amended, and a revised IRB certification was obtained (see Appendix A).

Amended recruiting notices were placed in place of the previous recruiting notices and also visited Seniorland twice, setting up a table in the lobby with a sign-up sheet so participants could be recruited for the study. A notice was also placed in Seniorland's monthly newsletter for two months (October and November 2013). Women at Seniorland were more eager to participate than men. Many of the men attending activities at Seniorland during recruiting visits stated that they did not use computers and hence were not interested in talking about computers. Twelve participants were recruited from Seniorland. Therefore, snowball sampling was employed to recruit participants age 60 and over, living in the county served by Seniorland, interested in talking about computer use and instruction experiences. Snowball sampling techniques are advantageous in assembling "a participant group of sufficient size and diversity to be representative of the specific target group" (Sadler, Lee, Lim, & Fullerton, 2010, p. 370). Snowball sampling also serves to reduce risk of affiliation between a researcher and a participant and thus avoid a conflict of interest. After all recruiting efforts were completed, the resulting sample consisted of 20 participants (16 females and 4 males).

## **Procedures**

### **Video Analysis**

Video analysis involves the observation of video documented events for topics of interest. With the proliferation of low-cost video documentation of everyday life, video recordings can be obtained of naturally occurring interactions that are not affected by researchers (Silverman, 2005). These recordings provide detailed information and opportunities for analysis independent of the person who took the video. People's observed actions and the social structures that these actions construct are of interest to social scientists (Knoblauch, Schnettler, & Raab, 2006). Film and video analysis have been used to study behavioral conflict (Van Elteren, 1992) and classroom teaching techniques (Copeland & Decker, 1996) allowing for

behaviors and events occurring at a specific site to be categorized according to meaningful labels (Barron & Topping, 2011; Tuten, 2009a). Video and audio records can help make sense of interactions observed, yet are also limited to the perspective of the placement of the camera. This limited perspective can be mitigated by positioning the camera to provide a wide view of the setting being captured (Halter, 2006).

In this study, video analysis of ICT instruction sessions was conducted to elicit examples of social supportive behaviors that could take place in that setting. The videos had been obtained as follows: A large research university in the southeastern United States had formed a community partnership with Seniorland to provide ICT instruction to Seniorland attendees. This partnership began with a series of classes in the summer and fall of 2008 delivered by groups of LIS graduate students and has continued with weekly tutoring sessions given by graduate student interns. Seniorland attendees would make appointments or drop in to the tutoring sessions for help with various computer functions such as email or social media use.

The ICT instruction classes conducted in the summer and fall of 2008 had been videotaped by the student manager of the ICT instruction project for a previous research study. I conducted a video analysis of videotaped classes from the summer of 2008. Interactions between ICT instructors and students were noted using pen and paper and immediately categorized according to House (1981) into the types of social supportive interactions: Emotional, instrumental, informational, and appraisal. Saturation was reached after viewing three hours of the videotapes, when no new additional types of interactions were noted. The interactions recorded served as the interactions depicted on the cards in the card-sorting exercises (see Appendix B). Because I had been an instructor during ICT instruction classes held during the fall of 2008, I examined only videotapes from the summer of 2008 in order to minimize bias

that could be introduced by examining videos in which I appeared. Thus, I examined only interactions between other ICT instructors and students.

## **Interviews**

Interviews are used in qualitative research to explore from participants' perspectives their lived experiences. Semistructured interviews allow participants to answer predetermined questions in their own words, with the interviewer asking probing questions to elicit deeper responses (Schutt, 2006). Predetermined questions are posed to participants to gain information that is known to be needed at the outset, and broader questions are posed to bring issues to the surface that may need further investigation (Doody & Noonan, 2013; Sekaran, 2003). The more a participant talks, the more likely attitudes, motives, emotions, and behaviors are to be revealed in the interview (Tuten, 2009b). Advantages of interviews include the ability of the interviewer to clarify understanding of the question and to probe for more specific information. Krosnick (1999) warned that respondents to open-ended questions may satisfice, or answer questions to satisfy requirements but not respond optimally, due to task difficulty, low respondent ability, and low respondent motivation. According to Holland and Christian (2009), higher response quality in open-ended questions is related to high interest in the subject matter of questions. Other issues with interviewing include possible bias of the interviewer, to perhaps probe more with some types of participants over others, and possible bias of participants against the interviewer due to looks, age, or sex, or reluctance to talk about sensitive issues (Ray, 1997).

Prior to performing the study, the interview questions were pilot tested on three older adults living in the same county as Seniorland. The pilot testers stated that they understood the questions and provided valuable feedback on structure of questions, such as asking separate

questions about visual, hearing, and dexterity/mobility disabilities, rather than asking one question encompassing all three types of disabilities.

In this study, interviews were performed to elicit participants' perspectives of social support seeking during their ICT instruction experiences. During the months of September through November 2013, I met with individual Seniorland attendee participants for a single interview in a private room (the library) at Seniorland. I met with non-Seniorland attendee participants in other locations, including their homes, offices, and a restaurant closed for business to allow for privacy and recording of the interviews. Each session ranged in length from 15 minutes to one hour and depended on the amount of input from participants. Most sessions lasted about 30 minutes.

Participants were provided with verbal and written information about the nature of the study, their role in the study, and risks and benefits of participation in the study. Informed consent was obtained by having participants read (or having read to them) an informed consent form outlining the study, risks and benefits, certifying they were over 19 years of age, and signing the document. Care was taken to ensure that participants understood the nature of informed consent. Participants were informed that their participation in the study was voluntary, they could withdraw from the study at any time, and that participation or nonparticipation would not affect any relationship they had with the university or with Seniorland. No participants withdrew from the study.

In order to collect information on participants' social support seeking when learning to use ICTs, semi-structured interviews were conducted that contained some open-ended questions. Therefore, to minimize the risk of satisficing (Krosnick, 1999), and to generate high-quality responses (Holland & Christian, 2009), probing questions were asked in order to elicit deeper

responses, the population sampled was one highly interested in talking about ICT use, since the recruiting materials mentioned that the interviews would be about ICTs (see Appendix A for recruiting materials and Appendix C for interview questions).

A single semi-structured interview was conducted with each participant. Interviews were conducted about social situations, ICT use, ICT instruction experiences, and physiological access challenge issues to gather meaning from the participants' experiences regarding ICT use, perceived social support from ICT instructors, desired social support from ICT instructors, and perception of the impact that physiological disability plays in social support seeking while learning to use ICTs. Participants were asked what behaviors their ICT instructors exhibited that they considered helpful (perceived social support). Participants were asked what their ICT instructors failed to do that could have been more helpful (desired social support). To elicit responses about impact of age-related physical disability on social support seeking, participants were asked about physical disabilities experienced, disclosure of physical disabilities to ICT instructors, and instructors' reactions to disability disclosure.

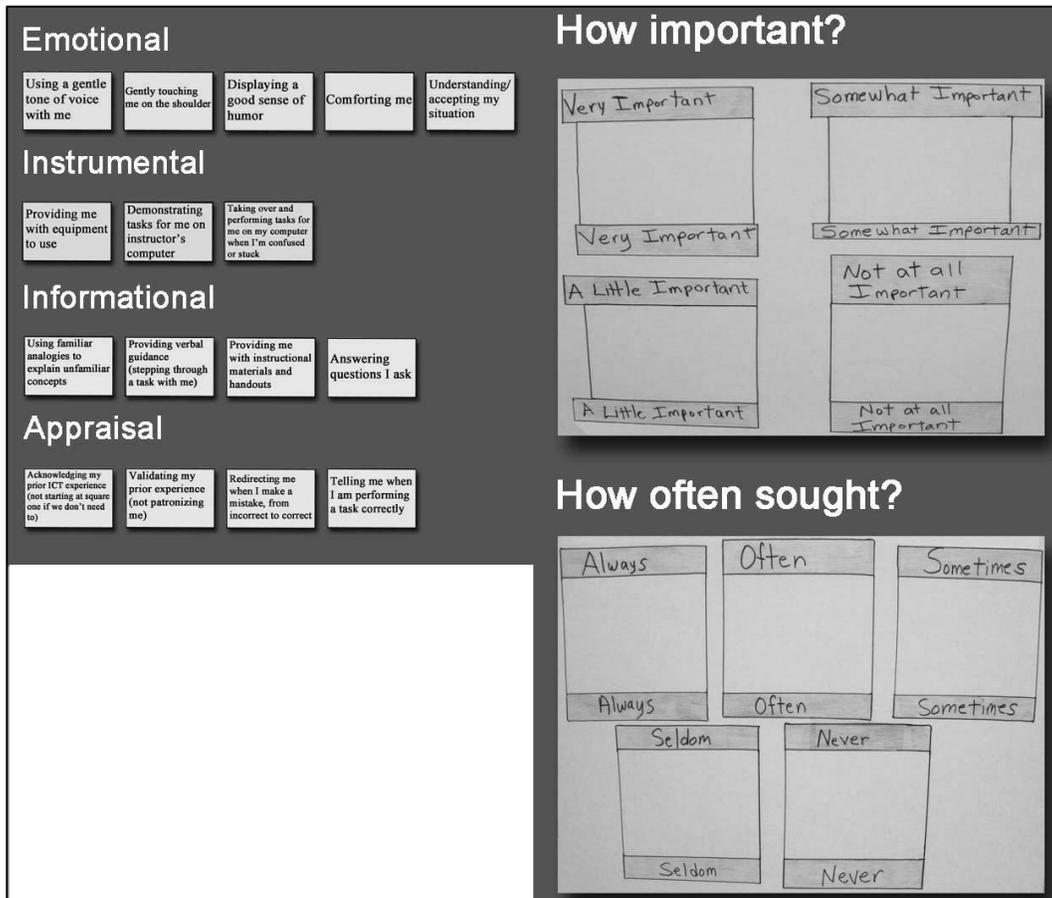
Each interview session proceeded in the following fashion: Demographic questions, questions about ICT use, questions about ICT instruction experience, card-sorting exercise #1 (behaviors they considered important), questions about physical disability, and card-sorting exercise #2 (behaviors they would seek).

### **Card-Sorting Exercises**

To further corroborate interview responses, a card-sorting technique (adapted from St. Jean, 2012) was used to gather additional information about the types of social support that participants felt were important when learning to use ICTs (Research Question 1), as well as the types of social support they actually would seek (Research Question 2). Card sorting was used in

this study to elicit additional, more specific information from participants about social support seeking.

Card-sorting is a data collection method by which participants sort index cards labeled with content pertinent to a study into groupings that make sense to them (Hepburn & Lewis, 2008). Developed by researchers and practitioners in the field of psychology, card sorting has been used in research in psychology as well as more recently in studies about health information seeking (St. Jean, 2012; Subramaniam, St. Jean, Taylor, Follman, & Casciotti, 2014). Card sorting has also been employed in web usability studies to categorize website content (Hepburn & Lewis, 2008; Mvungi, de Jager, & Underwood, 2008). Two types of card sorting methods are utilized: Open card sorting, in which participants place cards into categories that they define and name, and closed card sorting, where participants place cards into categories that are predetermined by researchers (Mvungi et al., 2008). Cards can be developed in a number of ways: mind mapping from literature reviews (St. Jean, 2014), preexisting categories such as website navigation (Mvungi et al., 2008), and data collected from previous studies (St. Jean, 2014). In this study, closed card sorting was employed. The cards were developed from analysis of previously obtained videos of ICT instruction sessions. The decks of cards were developed via video analysis of ICT instruction sessions conducted at Seniorland in the summer of 2008. Verbal and nonverbal interactions between instructors and students in the video were observed and immediately categorized according to House's (1981) four types of social support. The 335 interactions observed were broadly categorized and reduced to 16 representative interactions – five emotional, three instrumental, four informational, and four appraisal (see Appendix B). Each representative interaction was noted on one of 16 cards. Figure 4-1 depicts the cards and boards used in the card-sorting exercises (see Appendix D for the wording of the cards).



**Figure 4-1: Cards and Boards Used in Card-Sorting Exercises.**

In order to determine which social supportive modes of interaction with ICT instructors and tutors the older adults considered important when learning to use ICTs, four decks of cards depicted the four types of social support gleaned from the analysis of the videotapes: Emotional, instrumental, informational, and appraisal. On each card was a behavior that the participant may consider important for an ICT instructor or tutor to display (e.g., “Using a gentle tone of voice with me”). A board on the table was divided into four sections: “Very Important,” “Somewhat Important,” “A Little Important,” or “Not At All Important.” Participants placed each card into one of the sections on the board. Participants were told they could change their minds and place cards into another section on the board during the session. Participants were also given blank cards on which to write additional behaviors not depicted on the other cards if they so desired.

St. Jean (2012) found that a card-sorting activity increased interactivity in the interview sessions with participants and allowed participants to give honest answers and not just try to get a task done, such as with a survey.

Prior to performing the study, the card-sorting exercises were pilot tested on three older adults living in the same county as Seniorland. The pilot testers indicated that they could read and understand the text on the cards. They also said they felt that laminated cards were easier to handle than non-laminated cards, and that the risk of glare on the laminated cards was minimal.

During the study, the card-sorting exercises were audio recorded as part of the interview. Some participants did “think-alouds” throughout the exercise. Think-alouds involve completing a task while talking and provides a means for exploring how and why participants arrive at their answers (Kaklamanou, Armitage, & Jones, 2013). The think-alouds provided additional insight into participant responses, including literacy issues affecting reading of the cards.

In order to determine what types of social support older adults would seek when learning to use ICTs, four identical decks of cards were used: Emotional, instrumental, informational, and appraisal. Participants placed each card on a board divided into five sections corresponding to how often they would seek this behavior in an ICT instructor or tutor if they were to take a class. The sections were labeled “Always,” “Often,” “Sometimes,” “Seldom,” or “Never.” Blank cards were also offered to participants so they could add additional behaviors on blank cards if they desired. After the interview, results from both card-sorting exercises were recorded on a paper chart, as well as additional interactions that the participants wrote on blank cards. Decks of cards were shuffled in between interviews to randomize the order of the cards for each participant.

## **Data Analysis**

### **Video Analysis**

Three hours of videotape of ICT instruction sessions were observed. Interactions between ICT instructors and students were noted using pen and paper. There were 335 individual interactions between instructors and students noted and immediately categorized according to House (1981) into one of four types of social supportive interactions: Emotional, instrumental, informational, and appraisal. Interactions were broadly categorized within each social supportive type. Within emotional support, interactions were categorized into tone of voice, touching, humor, comforting, and understanding. Within instrumental support, interactions were categorized into providing equipment, demonstrating tasks, and performing tasks. Within informational support, interactions were categorized into explaining in familiar terms, guiding tasks, providing resources, and answering questions. Within appraisal support, interactions were categorized into acknowledging, validating, redirecting, and praising. The interaction categories served as the sample interactions depicted on the cards in the card-sorting exercises (see Appendix B).

### **Interviews**

Digital audio recordings of interview sessions amounted to 10.5 hours of recorded interview data. I transcribed each interview in preparation for qualitative data analysis. My background of over 20 years of experience as a medical transcriptionist assisted me in performing faithful transcription of the audio recordings. Interviews resulted in 305 transcript pages. Qualitative data analysis was carried out using QSR International's NVivo 10, which provided tools to aid in organization and continual analysis of data. The demographic data were organized into categories according to the questions asked (Mayan, 2009). This included age,

level of education completed, hours per week spent with family and friends, years of ICT use, and type of disabilities reported. For the open-ended questions, a modified version of Moustakas (1994) was used to analyze responses. This includes phenomenological reduction through verbatim statements communicated through interviews and extracting major themes repeated through the interviews. Statements were gathered from transcripts to create a list of nonrepetitive, nonoverlapping statements, which were clustered into larger themes. These included: ICT instruction settings, emotions during ICT learning, think-alouds, and interest in future ICT classes. A thematic codebook was created (see Appendix E).

To answer Research Question 1, “What types of social support do older adults consider important when learning to use ICTs?” patterns were noted in the responses to the interview questions, “What were the most helpful things the instructor did to help you learn?” and “What did the instructor do that was not helpful?”

Interview responses were categorized into types of social support (emotional, instrumental, information, and appraisal) that participants experienced during ICT instruction. If a participant indicated that a social support type was helpful, it was considered important. If a participant indicated that a social support type was not helpful, it was not considered important. It was noted how strongly Social Support Theory was supported by each type of support considered important. A simplified quartile method was employed: If 15 or more participants (75-100%) considered a social support type important, it was deemed as strongly supporting Social Support Theory. If 10 to 14 participants (50-74%) considered a social support type important, it was deemed as moderately supporting Social Support Theory. If nine or fewer participants (1-49%) considered a social support type important, it was deemed as weakly

supporting Social Support Theory. If no participants (0%) considered a social support type important, it was deemed as refuting Social Support Theory.

To answer Research Question 2, “What types of social support do older adults seek when learning to use ICTs?” patterns were noted in the responses to the interview question, “What did the instructor fail to do that could have been more helpful?” (social support desired). Interview responses were categorized into types of social support (emotional, instrumental, information, and appraisal) that participants considered helpful but ICT instructors could have exhibited during ICT instruction to help the participant learn better. If a participant indicated that an ICT instructor failed to exhibit a social support type that would have been helpful, that social support type was considered to be a social support type that the participant would seek. It was noted how strongly Social Support Theory was supported by each type of support sought. As with Research Question 1, a simplified quartile method was employed. If 15 or more participants (75-100%) would seek a social support type, it was deemed as strongly supporting Social Support Theory. If 10 to 14 participants (50-74%) would seek a social support type, it was deemed as moderately supporting Social Support Theory. If nine or fewer participants (1-49%) would seek a social support type, it was deemed as weakly supporting Social Support Theory. If no participants (0%) would seek a social support type, it was deemed as refuting Social Support Theory.

To answer Research Question 3, “How do older adults perceive the impact of age-related physical disability on social support seeking when learning to use ICTs?” patterns were noted in the responses to the following interview questions:

- “What difficulties if any, do you have reading a computer screen?”
- “What difficulties, if any, do you have hearing what comes out of the computer speakers?”

- “What difficulties if any, do you have using a computer keyboard or mouse?”
- “How did these difficulties affect your computer classes?”
- “Did the instructor take these things into consideration during your classes? How or how not?”

Responses were categorized into types of social support sought. If a participant’s response indicated that age-related disability led to the seeking of social support type, the social support type was considered impacted by age-related disability. As above, a simplified quartile method was employed. If 15 or more participants (75-100%) considered a social support type as one they would seek, it was deemed as strongly supporting Social Support Theory. If 10 to 14 participants (50-74%) considered a social support type as one they would seek, it was deemed as moderately supporting Social Support Theory. If nine or fewer participants (1-49%) considered a social support type as one they would seek, it was deemed as weakly supporting Social Support Theory. If no participants (0%) considered a social support type as one they would seek, it was deemed as refuting Social Support Theory.

### **Card-Sorting Exercises**

To answer Research Question 1, “What types of social support do older adults consider important when learning to use ICTs?” patterns were noted in the responses to card-sorting exercise #1. Behaviors depicted on cards in card-sorting exercise #1 were ranked by participants into Very Important, Somewhat Important, A Little Important, and Not At All Important. Behaviors were categorized into House’s (1981) four social support types (emotional, instrumental, informational, and appraisal). If 75% of the responses of a social support type were ranked as Very Important or Somewhat Important, it was deemed as strongly supporting Social Support Theory. If 50-74% of the responses of a social support type were ranked as Very

Important or Somewhat Important, it was deemed as moderately supporting Social Support Theory. If fewer than 50% of the responses of a social support type were ranked as Very Important or Somewhat Important, it was deemed as weakly supporting Social Support Theory. If no responses of a social support type were ranked as Very Important or Somewhat Important, it was deemed as refuting Social Support Theory. Card-sorting responses for each participant were also examined in light of interview responses to determine if card-sorting responses corroborated interview responses.

To answer Research Question 2, “What types of social support do older adults seek when learning to use ICTs?” patterns were noted in the responses to card-sorting exercise #2. Behaviors depicted on cards in card-sorting exercise #2 were ranked by participants into Always, Often, Sometimes, Seldom, and Never. Behaviors were categorized into social support types (emotional, instrumental, informational, and appraisal). If 75% of the responses of a social support type were ranked as Always, Often, or Sometimes, it was deemed as strongly supporting Social Support Theory. If 50-74% of the responses of a social support type were ranked as Always, Often, or Sometimes, it was deemed as moderately supporting Social Support Theory. If fewer than 50% of the responses of a social support type were ranked as Always, Often, or Sometimes, it was deemed as weakly supporting Social Support Theory. If no responses of a social support type were ranked as Always, Often, or Sometimes, it was deemed as refuting Social Support Theory. Card-sorting responses for each participant were also examined in light of interview responses to determine if card-sorting responses corroborated interview responses.

## **Methodological Rigor**

Methodological rigor was addressed in both the quantitative and qualitative aspects of this study in terms of construct validity, internal validity, credibility, external validity, transferability, reliability, dependability, objectivity, and analytic generalization.

### **Construct Validity**

According to Sekaran (2003) and Trochim (2006a), construct validity refers to how well results obtained from using an instrument fit the theories around which a study is designed. Results can either show convergent validity, in which results obtained with two different instruments are highly correlated, or discriminant validity, in which results are predicted and found to be uncorrelated. In this study, construct validity was addressed by using two instruments to ask similar questions of participants – social support types considered helpful/unhelpful and desired but not received (interviews), and social support types considered important and that they would seek in the future (card-sorting exercises). Threats to construct validity occur when the study instruments do not adequately represent theoretical constructs (Dunn, 2009). In this study, member checking was used to ensure that results adequately represented participants' responses.

### **Internal Validity**

According to Babbie (1989) and Dunn (2009), internal validity reflects the causal relationship between the independent variables and the dependent variables in a study. In this study, this involved the ICT instructor behaviors in the card-sorting exercises considered important by the participants as well as reflecting the social support types that the participants would seek in future ICT instruction sessions. Internal validity was addressed by categorizing the behaviors into social support types in both the interviews and the card-sorting exercises.

Threats to internal validity include not controlling for alternative explanations for obtained results, such as history, maturation, testing, selection, population size, and instrument sensitivity (Dunn, 2009). In this study, internal validity issues included small population size and selection as well as instrument sensitivity. These issues are addressed in the Discussion and Conclusions chapter in the section on limitations of the study.

### **Credibility**

In a qualitative study, credibility ensures that the findings make sense and are an accurate representation of participants and data (Mayan, 2009). To address credibility in this study, use of multiple methods, member checking, and peer review and debriefing were used (Creswell, 2007). Data was collected from both interviews and card-sorting exercises. Because I met with each participant for a single interview, member checking was employed by confirming my interpretation of the meaning of the participant's statements. After each of the card-sorting exercises, I asked the participant, "Are these your answers?" and gave the participant an opportunity to review the cards and change answers. I enlisted the assistance of a doctoral student with IRB certification who conducts research in the area of older adults and ICT use for peer review of the thematic codebook. The reviewer was included in the IRB certification for this study. The reviewer read the transcripts and reviewed the codebook. Discrepancies were discussed and included suggestions of combining apparently overlapping categories. The reviewer suggested combining "ICT instructor unhelpfulness" and "What ICT instructor could have done better" into one category. I explained that "ICT instructor unhelpfulness" indicated behaviors that were unhelpful, and "What ICT instructor could have done better" indicated social support that a participant desired, which is different from unhelpful behaviors. Also, the reviewer suggested combining all the "Thinking aloud during card sorting" subcategories into

one category, since the cards had been shuffled in the card-sorting exercise, and the think-alouds from each participant often occurred in one continuous block of text encompassing several cards of several social support types. The reviewer felt that the categories overlapped. However, since I was looking for think-alouds to provide information about different social support types, I kept each category as a separate subcategory.

### **External Validity**

According to Babbie (1989) and Dunn (2009), external validity refers to the extent that findings can be generalized to a larger population or other settings. This can be achieved through replication of the study. While findings of this exploratory study cannot be immediately generalized to a larger population, replication of the study with improvements to the study instruments will contribute to external validity. This is discussed in the Discussion and Conclusions chapter in the section on limitations of the study.

### **Transferability**

Transferability assesses the applicability of findings to the settings (Mayan, 2009). This was addressed in this study by providing rich descriptions of the participants and settings. For example, descriptions of the settings in which participants received ICT instruction included setting (work, home, college class, etc.) and relationship to instructor (relative, supervisor, IT professional at work, professor, etc.).

### **Reliability**

Reliability refers to whether a particular instrument measuring the same object repeatedly would yield the same results each time (Babbie, 1989; Bernard, 2013). Creating reliable measures involves asking participants questions that are relevant to them that they are able to answer, as well as asking the same question more than once. In this study, participants were

asked about helpful ICT instructor behaviors as well as unhelpful ICT instructor behaviors. Participants did not consider the same behaviors both helpful and unhelpful in the interviews. In the card-sorting exercises, participants were asked about selected ICT instructor behaviors that they considered important and would seek in future ICT instruction sessions. Participants fairly consistently considered the same behaviors as helpful in the interviews and important in the card-sorting exercises. Threats to reliability include complexity level of questions, leading to misunderstanding and inconsistent replies to questions (Bernard, 2013). Rewording of some questions and card-sorting exercise in phrases in future iterations of this study is addressed in the chapter Discussion and Conclusions chapter in the section on limitations of the study.

### **Dependability**

Dependability in a study involves reviewing how decisions are made through the use of an audit trail (Mayan, 2009). This was addressed in this study by keeping careful records. Paper records included IRB certification documents, signed participant informed consent forms, interview sheets containing interview questions and handwritten researcher notes, paper sheets containing rankings of card-sorting exercises, and lists of behaviors noted in the ICT instruction videos. Electronic records included electronic transcripts containing participant interviews, and participant statements clustered into categories created using NVivo 10.

### **Objectivity**

Objectivity in this study was addressed in terms of confirmability, which is used during data collection and analysis to ensure that findings are logical and can be confirmed or corroborated by others (Mayan, 2009; Trochim, 2006b). This was addressed in this study by checking the data and enlisting another researcher to review the data.

## **Analytic Generalization**

Analytic generalization serves to generalize findings to a theory rather than a population, by providing evidence supporting, though not definitively proving, that theory, as well as the scope of application of a theory, by providing evidence refuting the theory (Firestone, 1993). This was addressed in this study by relating findings to the research questions in terms of supporting or refuting Social Support Theory.

## **Ethical Considerations**

The study was guided by ethical principles of voluntary participation, subject well being, identity disclosure, and confidentiality (Schutt, 2006). I introduced myself as an academic researcher and informed participants about the topic of the study on the recruiting notices, during the recruiting sign-up sessions, and during the briefing and debriefing portions of the interview. Participants were informed about the voluntary nature of the study and the risks (minimal) and benefits of the study (contributing to knowledge about improving ICT instructions for older adults). This was explained to them verbally and in the informed consent form that each participant signed. Participants were given a copy of the consent form. Participants were also informed that they would be invited to a public presentation of the study results that I would give at Seniorland after completion of the study. Participants were offered a \$5 Walmart gift card for participation in the study. Participants were told they may withdraw from the study at any time without consequence. No participants chose to withdraw from the study. Participants were presented with a consent form in a large-print format (14 point Times New Roman) to mitigate reading difficulties due to age-related visual decline. One participant with legal blindness was unable to read the form, so I read the form aloud to her, as well as the cards and boards in the card-sorting exercise. Contact information for the university's Institutional Review Board (IRB)

was available on the consent form, and participants were given a printout of the IRB's website and participant survey forms. Participants were given an opportunity to ask questions about the study and consented to participation in the study by signing the consent form. Participants were given a copy of the consent form to retain for their own record of participation (see Appendix A).

To address confidentiality concerns, each participant session, including interview and card-sorting exercises, was audio recorded with a digital recorder. Each participant was assigned a number for identification. During the recorded interview, I referred to the participant by participant number only. In interview transcripts, participants were identified by participant number only. The results of the card-sorting exercises were recorded on a paper chart after each interview (one chart per participant), using only the participant number for identification. Data from the paper charts were entered into Excel for examination (see Appendix F for paper chart). Digital audio files and transcripts were stored on an encrypted flash drive and kept in a locked university office. Blank cards on which participants had written additional social supportive interactions were kept in a locked university office. In accordance with the informed consent form that participants signed regarding confidentiality of participants, identities of participants were kept anonymous in reporting of data. Participants were informed that they would be referred to by a pseudonym in any publication. Interview sheets and transcripts identified participants only by participant number. Informed consent forms identifying participants by name and number were kept separate from transcripts.

### **Summary**

This chapter has described the methods used in this study for data collection, video analysis, interviews, and card-sorting exercises, in order to answer the research questions: (1) What types of social support do older adults consider important when learning to use ICTs? (2)

What types of social support do older adults seek when learning to use ICTs? and (3) How do older adults perceive the impact of age-related physical disability on social support seeking when learning to use ICTs? It also discusses the methodological rigor and ethical considerations addressed in the study. The next chapter presents the results of the study.

## CHAPTER 5

### RESULTS

#### **Introduction to the Results**

This chapter consists of five main sections. The first section provides the findings from the video analysis of the ICT instruction sessions. The second section provides an overview of the group of people who participated in this study, including the results from the demographic questions in the interviews and their personal stories. The third section provides the findings from the interviews relating to each of this study's research questions, as well as emerging themes for future study. The fourth section provides the findings from the card-sorting exercises relating to Research Questions 1 and 2, including think-alouds during the card-sorting exercises. The chapter then concludes with a summary of the research findings.

#### **Research Questions**

The self-described experiences of older adults seeking social support while learning to use ICTs was explored by inquiring how the experience of older adults learning to use ICTs supports Social Support Theory. Thus, the following research questions were posed:

- RQ1: What types of social support do older adults consider important when learning to use ICTs?
- RQ2: What types of social support do older adults seek when learning to use ICTs?
- RQ3: How do older adults perceive the impact of age-related physical disability on social support seeking when learning to use ICTs?

The overarching research problem addressed by this study was how Social Support Theory explains the phenomenon of ICT learning in older adults. Additional goals of this study included investigating the impact of physiological disability on social support seeking. Emerging themes related to these research questions are also discussed.

### **Video Analysis**

Three hours of videotape were analyzed from Basic Computer classes taught weekly at Seniorland on July 8, 2008 through July 22, 2008. Each video included a one-hour class session, comprising four instructors and eight older adult students. Each instructor/student interaction, whether between an instructor and an individual student, or an instructor and the entire class, was noted and immediately categorized into one of House’s (1981) four types of social support – emotional, instrumental, informational, or appraisal. A total of 335 interactions for the three hours were noted. Interactions were widely categorized within the types of social support. Emotional support was categorized to tone of voice, touching, humor, comforting, and understanding. Instrumental support was categorized to providing equipment, demonstrating tasks, and performing tasks. Informational was categorized to explaining, guiding, providing resources, and answering questions. Appraisal support was categorized to acknowledging, validating, redirecting, and praising. Table 5-1 shows the categorization of the behaviors. Also, see Appendix B for more details.

<u>Social Support Type</u>	<u>Category</u>	<u>Video 1</u>	<u>Video 2</u>	<u>Video 3</u>	<u>Total</u>
<b>Emotional</b>	Tone of voice	3	2	3	8
	Touching	9	6	3	18
	Humor	4	4	4	12
	Comforting	1	5	5	11
	Understanding	5	8	8	<u>21</u>
<b>Total Emotional</b>					<b>70</b>

<b>Instrumental</b>	Providing equipment	1	1	2	4
	Demonstrating tasks	7	10	15	32
	Performing tasks	8	13	11	<u>32</u>
				<b>Total Instrumental</b>	<b>68</b>
<b>Informational</b>	Explaining	3	8	4	15
	Guiding	29	52	34	115
	Providing resources	1	1	1	3
	Answering questions	7	8	6	<u>21</u>
				<b>Total Informational</b>	<b>154</b>
<b>Appraisal</b>	Acknowledging	7	4	3	14
	Validating	2	3	4	9
	Redirecting	2	6	4	12
	Praising	4	10	4	<u>18</u>
				<b>Total Appraisal</b>	<b>53</b>

**Table 5-1: Video analysis of behaviors.**

### **Emotional Support**

As can be seen in Table 5-1, five categories of emotional support behaviors were observed in the videos. This is supported by the work of Bean and Lavin (2003), as well as Lin, Tang, and Kuo (2012), who found that emotional support behaviors are exhibited during instruction. When talking to the entire class, instructors spoke in a clear, well-enunciated voice. When speaking to individual students, they used a soft, gentle tone of voice. Therefore, tone of voice when talking to individual students became the basis for the card that said, “Using a gentle tone of voice with me.” Instructors were also seen joking with the class or with individual students. This became the basis for the card that said, “Displaying a good sense of humor.” Instructors were observed comforting students, including reassuring them that they would not damage the computer, and that mistakes could be corrected. This became the basis for the card that said, “Comforting me.” Instructors were also observed exhibiting behaviors indicative of

understanding, including acknowledging different learning levels, understanding students' comfort levels with using keyboard versus mouse or laptop trackpad, and acknowledging different learning levels of students. This became the basis for the card that said, "Understanding/accepting my situation." Out of all of the emotional supportive behaviors, touching was observed the most often, with all occurrences involving an instructor touching an individual student gently on the shoulder after stepping the student through a task, answering questions, or confirming that the student had performed a task correctly. This became the basis for the card that said, "Gently touching me on the shoulder."

### **Instrumental Support**

Three subcategories of instrumental support behaviors were observed in the videos. This is supported by the work of Bean and Laven (2003), who found that instrumental support behaviors are exhibited during instruction. These behaviors included providing laptops and mice for students to use during instruction and promptly replacing equipment when the equipment failed during the class. This became the basis for the card that said, "Providing me with equipment to use." Instructors were also observed sitting at the computer that was at the front of the room and performing tasks, with the computer screen image projected on a screen for the students to view while sitting at the laptops that were set up along the conference table in the room. This became the basis for the card that said, "Demonstrating tasks for me on instructor's computer." Instructors were also observed standing next to where individual students were sitting and taking over the mouse or keyboard to perform a task for a student. This became the basis for the card that said, "Taking over and performing tasks for me on my computer when I'm confused or stuck."

## **Informational Support**

Behaviors categorized as informational support constituted the largest proportion of behaviors observed. This is supported by the work of Bean and Laven (2003), who found that informational support behaviors are exhibited during instruction. Four subcategories of informational support behaviors were observed. Within informational support, “guiding” behaviors were observed the most often. This included instructors stepping through tasks with the entire class while standing at the front of the room, or standing next to individual students while stepping through a task. These behaviors were the basis for the card that said, “Providing verbal guidance (stepping through a task with me).” Instructors were also observed answering questions posed by students asking in front of the entire class or when the instructor was standing next to an individual student seated at the table. This became the basis for the card that said, “Answering questions I ask.” Instructors were also observed explaining concepts to students either while standing in front of the class or at an individual student’s desk, using familiar terms. Some examples included saying that the numeric keypad was “like the keypad on an adding machine, or file folders created on the desktop were “like where we keep recipes – not all over the house, but in one place near the kitchen.” This became the basis for the card that said, “Using analogies to explain unfamiliar concepts.” Also, at the beginning of each class, instructors handed out sheets of paper containing instructions on how to perform various tasks, such as cut, past, undo, and new document. These sheets were kept in folders that students had been given in the first class and brought with them to each class. This became the basis for the card that said, “Providing me with instructional materials and handouts.”

## **Appraisal Support**

Four types of behaviors were observed that were categorized into appraisal support. This is supported by the work of Bean (2003), who found that appraisal support behaviors are exhibited during instruction. Within appraisal support, “praising” behaviors were observed the most. This included instructors affirming that a student had performed a task correctly. This included making remarks such as, “There you go,” “You did it!” or “You got this.” These “praising” behaviors were the basis for the card that said, “Telling me when I am performing a task correctly.” Another type of behavior exhibited included redirecting students who had performed tasks incorrectly into how to perform them correctly. These behaviors were distinguished from providing verbal guidance, as they began when students were already performing a task and the instructor started a statement with “No,” or “Not” or “Don’t” before redirecting. This became the basis for the card that said, “Redirecting me when I make a mistake, from incorrect to correct.” Finally, two other types of behaviors were loosely grouped and categorized into appraisal support. These included “acknowledging” behaviors, including any behavior that acknowledged that the student had acquired ICT knowledge or experience either before or during the class. This included acknowledging students’ prior ICT experience, acknowledging students may have differently configured computers at home, reviewing past lessons, and previewing upcoming lessons. This group of behaviors became the basis for the card that said, “Acknowledging my prior ICT experience (not starting at square one if we don’t need to).” The “(not starting at square one if we don’t need to)” explanation was added to the card for clarification. Finally, “validating” behaviors were observed, which included any behavior that exhibited the instructor treating the student with respect. This included using correct computer terminology after explaining concepts, realizing that an important icon was

missing from a student's desktop and the student being unable to find it was not due to student error, asking students how to perform a task and eliciting responses, and asking students to explain items on a news website. These became the basis for the card that said, "Validating my prior experience (not patronizing me)." The "(not patronizing me)" was added to the card for clarification.

### **Summary**

In summary, 335 instructor behaviors were observed during the three hours of videotaped classes, and these behaviors were immediately categorized into House's (1981) four types of social support: emotional, instrumental, informational, and appraisal. Observance of these types of behaviors in the context of ICT instruction is supported in the literature (Bean, 2003; Bean & Lavin, 2003; Lin et al., 2012). The behavior types were further categorized within each social support type: emotional (5), instrumental (3), informational (4), and appraisal (4), for a total of 16 sample behaviors. These sample behaviors became the basis for the 16 cards for the card-sorting exercises.

### **Participant Demographics and Stories**

Twenty older adults participated in the study. Table 5-2 shows the participant demographics. To protect anonymity, pseudonyms were used for all participants. The average age of the participants was 70. Four participants were male, and 16 were female. Half of the participants lived with a spouse; most of the others lived alone, and a few lived with an adult child or a grandchild. Level of education completed varied from eighth grade to postgraduate studies, with most participants stating they had completed high school or some college.

<u>Pseudonym</u>	<u>Age</u>	<u>Race</u>	<u>Education</u>	<u>Living Situation</u>	<u>Years Using ICT</u>
Rosa	60	B	High school	Spouse	3
Peggy	60	W	Associate's degree	Alone	25
Marie	63	W	High school	Spouse	20
Cora	64	B	High school	Grandson	1
Dave	64	W	Graduate school	Spouse	15
Sophia	64	W	Graduate school	Spouse	30
Betty	65	W	Some college	Adult son	20
Blanche	65	W	Graduate school	Spouse	27
Bernard	65	B	Some college	Spouse	6
Florence	66	B	Cosmetology school	Alone	5
Bill	66	W	Graduate school	Spouse	26
Gloria	67	B	High school	Spouse	0
Sarah	69	W	High school	Alone	0
Shirley	73	W	Some college	Adult daughter	20
Charlotte	74	W	Some college	Spouse	13
Edna	75	B	Cosmetology school	Spouse	10
Sylvia	77	B	Some college	Alone	5
Ida	84	W	Some college	Alone	30
Annette	87	W	Eighth grade	Alone	0
George	88	W	Eleventh grade	Alone	8

**Table 5-2: Participant Demographics.**

Years of ICT experience ranged from none to 30. Those who reported they had no experience (0 years) stated that they never had the opportunity to learn, they were learning and did not feel competent (and thus not a computer user), or they “never did catch on” to learning how to use a computer.

In order to obtain a better understanding of Social Support Theory as a lens to examine the perspectives of older adults learning to use ICTs, familiarity with life context and background on participants’ ICT learning experiences is necessary. This background provides insight into the interactions with ICT instructors that they deemed important and desired during the learning process. The participant stories also revealed emerging themes that will be

elaborated on later in the chapter. Following are the stories of the 20 participants in this study gleaned from their interview responses.

Rosa, age 60, was a high school graduate. She was retired and lived with her husband. Rosa attended Seniorland two to three days a week for half days, and spent much of that time sitting in the lobby and crocheting items to sell in Seniorland's consignment shop. Affable and talkative, she was Seniorland's unofficial greeter and recruited several other participants for the study. Getting about with the use of a walker, she kept her craft items and an abundance of snacks handy in the pocket of her walker. She had a computer at home but did not use it often because the dial-up Internet service in her rural community was very slow. She did use a cell phone (flip phone) and her daughter's Kindle. "I like to look at crocheting and knitting stuff on it." Rosa told me that she attended computer classes at Seniorland a few years ago. She described the classes as small group and individual sessions conducted by two university students, with laptops supplied by the local public library. In these classes, she learned how to email and use Google. Rosa said that she enjoyed the individual attention in the small classes. When she began attending the classes, she was nervous, but the teacher told her she would not break the computer. She really enjoyed when the instructor showed her how to play Solitaire on the computer. She said it helped her to feel "comfortable around her and the screen."

Peggy, age 60, was a retired nurse. She lived alone, with no family nearby. She attended activities at Seniorland, but not very often. She also liked to visit the public library. She did not currently have a computer at home or a cell phone, but said she was planning to get another cell phone (did not specify whether flip phone or smartphone). When she was working in a hospital in the late 1980s, she and her co-workers attended classes onsite to learn the new computer system. She felt anxious and nervous, that "I might do something wrong, wouldn't be able to get

out of it or figure out what to do.” She felt more comfortable after she started using it. She felt that verbal step-by-step instructions for each task were very helpful. She said she also took a few computer courses at the local community college in the late 1990s and early 2000s. Because she was already familiar with the computer from work, she felt more comfortable, but she felt “like I was behind” because the class went at a faster pace than she would have liked, and there was not as much instructor interaction as there had been in the classes at work. She said she had heard about the computer classes at Seniorland but was not able to attend them at the time.

Marie, age 63, was a high school graduate who lived with her husband and worked full time in a doctor’s office. She said she used a computer at home and had an iPhone. She learned how to use a computer at work in the 1990s when her employer sent her to Excel classes. She said that at first, “I didn’t learn a thing,” because the instructor went too fast. Eventually, she learned what she needed to for work, but it would have helped if the pace of the class had been slower. She said that sometimes the font size on the computer was too small, but she knew how to increase it.

Cora, age 64, lived with her grandson. She said she did not spend much time with other family members because everyone worked, but “we holler at each other on the phone.” She worked as a personal care attendant and brought her employer, Mrs. G., a 90-year-old woman, to Seniorland every afternoon. She said, “She taught me how to play cards, and so that’s what I do.” Although she enjoyed playing cards and spending time with Mrs. G., she said, “I’m going through this little thing with memory loss; I just can’t keep whole things too good.... I’m gonna get me a vitamin to help my brain.” She had some individual computer instruction at another senior service agency in the area about a year before, and she said her grandson sometimes showed her how to do things on the computer. She had a new computer at home, as well as a

smartphone, which she occasionally used to go online. She said, “I can pull up some things on my cell phone quicker than I can on the computer.” Regarding her memory loss, she said she felt afraid and “weird” when first learning how to use the computer, “like I wasn’t going to learn it.” However, the instructor was patient with her and told her not to worry and to “just take your time.” She felt like the memory issues affected her retention of lessons learned, and if she learned something she might forget it when she got home. She said that she told her instructor about her memory difficulties, and the instructor worked with her and told her not to worry, “Just take your time. We got time to get it together.’ And so, I like that.”

Dave, age 64, lived with his wife. A corporate attorney owning a law practice downtown, he had recently reduced his work hours to devote more time to family and community service endeavors. He had a computer in his office for many years, but said he did not really use it, preferring instead to dictate work to his secretary. His first experience with being required to use a computer himself was when he returned to graduate school five years earlier. The second course in the program involved information technology, and he said he felt “ready to throw in the towel” because he did not feel “qualified to be in the class.” He saw that everyone else in the class appeared younger than him and “had lived with computers.” He approached his advisor, who suggested that he enlist the help of a tutor. He asked his son, a recent college graduate, to help him, and he got permission to bring his son to the technology class with him. The setup was so successful that the son became interested in the graduate program and enrolled the following semester, and they both completed the program. Dave said he felt more comfortable using a computer, and upon his secretary’s retirement, he felt confident enough to perform tasks on his own, including typing an appellate brief. He said, “If you’d told me when I started practicing law that I would type a brief to the court of appeals, I’d say you’ve

got to be kidding. But I did.” He also showed me his smartphone, which he said was his means of communication when he traveled out of town. Having his son help him learn how to use the computer was a good bonding experience. He said, “The roles were reversed. A father generally instructs the son on things. Well, here’s the son instructing the father, and he enjoyed it, and I enjoyed it, too.”

Sophia, age 64, was a retired social worker. She lived with her partner Blanche, and Blanche’s grandchildren often stayed with them. Other than spending time with Blanche and the grandchildren or attending church and occasionally seeing friends from church, Sophia mostly kept to herself. She learned how to use a computer in the 1980s when she bought a Tandy Color Computer and a book on how to use it. She said she was fascinated with it. “It was laborious, because you were working in BASIC ... If I made a mistake, then sometimes I had to go back and retype an awful lot of code, but no, I wasn’t scared of it.” As new computers and operating systems came out, she would upgrade to a new computer and buy a book on how to use it, often a “Dummies” book. She said she was determined to learn, “Because it was a tool I wanted to be able to use.” When the hospital where she worked converted to computerized records in the late 1990s, she and her co-workers had informal training on the system and looked to each other for support if they had questions. “At that point, I knew how to use the Internet. I knew how to do Word. It was just a matter of getting familiar with the computerized record.”

Betty, age 65, attended a few years of college and was retired from working at a hospital. She lived with her adult son who had a disability. She spent all day with him, and spent about two or three hours a week with friends, going out to eat. She owned a cell phone, but not a computer. She learned how to use a computer at work in the 1990s, when the hospital converted to a computerized patient information system. She said she attended classes at work with a large

group of employees to learn the new system. She said, “We were not on the computer at the time in class,” and they were all afraid that once they got back to their offices and used the computers, they would press the wrong button and delete patient information. The instructor “just reassured us, going through the information – reassuring us over and over that we would not delete information, and like I say, we had a number of in-services for that.” She said that she had always had poor eyesight, and sometimes the font size on the computer was too small, but she knew how to increase the font size.

Blanche, age 65, was a retired social worker and lived with her partner Sophia. Blanche suffered from an arthritic condition and diabetes and was often bedridden, but on good days she liked to get out of the house with Sophia or her grandchildren, attend church, and go out to eat with friends. She learned how to use a computer in the 1980s when she worked for a construction company, before attending graduate school. She was hired to keep track of equipment that had gone out to job sites. She was the first woman hired at that office, and she said, “They had to build me an office at the shop and a bathroom, because they only had men there.” The company assigned an employee to teach Blanche how to convert the handwritten invoice system to a computerized system. She said that what helped her the most was her instructor being available whenever she had a question. He would either answer questions by phone or come to the office to help her out. She said she never took any formal computer classes. When she moved in with Sophia, Sophia introduced her to personal computers, which she used for games and finding information and other functions that she did not learn on the work computer. She used a Kindle for both reading and listening to books. She owned a cell phone, but it was not a smartphone, “just a simple old lady phone,” which she only used for phone calls. She said that she was interested in learning how to use a computer to create

spreadsheets, for example, to track her blood sugar levels. She did not attend activities at Seniorland but was interested in doing so.

Bernard, age 65, lived with his wife Edna and worked full time as a construction laborer. He attended two years of college. He was active in church and attended an addiction recovery program. Bernard said that he learned how to use a computer several years before when he was in prison on drug charges. A computer lab was available for inmates to sign up and use, although there was no instructor to guide them. Bernard said that his fellow inmates taught him how to use the computer, and he appreciated their patience with him as he learned new tasks, such as how to use the mouse and how to open and close programs. After he learned, he said, “I felt pretty good about myself.” However, since the computer room was not open all the time, he could only practice there at certain times. He and Edna had a new laptop computer and wanted to learn how to use it, contemplating taking a class at a local college. He had a cell phone (flip phone) but said he did not use it to go online. He said, “It would be too much trickery and stuff. People would be trying to find out your Social Security number and all that, so we don’t take no chances.”

Florence, age 66, was a retired hairdresser, having attended cosmetology school after high school. She lived alone in senior housing, and said she spent “basically all day” at Seniorland five days a week, riding one of Seniorland’s buses to and from Seniorland. About two years before, she took a computer class at Seniorland that met four an hour a day Monday through Friday for one week. She thought the instructors were from the university, and they brought laptops with them. There were about 10-12 people in the class. At first, she was afraid she was going to mess up. “I was kind of nervous, because I had to learn how to cut it on, and how to use the mouse and different things, so I was kind of nervous at first.” She felt she had

learned a little in the one week, but the instructors “didn’t spend enough time with one person. . . I didn’t learn as much as I thought I was going to learn.” After the one-week class was over, “it didn’t continue after that, so I’m still working on learning the computer. . . . With Christmas coming, I’m gonna have to get me a laptop.” She said, “There’s a computer where I live at also, and I’m trying to get to where I can go back and see if I can work with it, but I hadn’t did it yet.” She said, “They had also told us they was giving computer classes at the library, but I never could get transportation backwards and forwards to go to the library to learn it.” She owned a cell phone (did not specify if it was a smartphone or a flip phone) and said that when she visited her son in another city, “My granddaughter will be trying to help me – trying to teach me how to do it. And so, the phone that I got now, they want me to learn computer along with the phone, so I’m working on it.”

Bill, age 66, lived with his wife. He worked full time as a reference librarian at a local community college and was also active in his church as a musician. His first experience with computers was in the mid-1980s on an Apple II at work. He had informal training on it at work. He remembered that when the college moved to a new campus in the mid 1990s, they transitioned to Windows computers. His supervisor told him that he would not be able to take his “old Apple IIe computer” with him and that he’d have to learn the new system, which included learning how to use a mouse. He said that he felt uncomfortable and afraid of pressing the wrong button and making the system “freeze up,” but was “hoping that I could learn what I needed to keep my job.” He said he used a cell phone (prepaid flip phone) that his supervisor gave him after a tornado several years earlier, when power and phone lines were not working, but the reception was not good, and he did not continue to use a cell phone after that. Bill also shared that not having a cell phone prevented him from being able to contact anyone when he

arrived at church early on Sunday mornings to prepare for the church service, as the church building did not have a landline phone. However, he stated that since he was only there for a short time in the morning, it did not bother him that much. He said, “I really don’t stop and think about it.” He did not use an e-reader, but planned on learning how to use one, as the library planned to implement their use in the near future. He had been having steadily worsening hearing loss for the past 15 years, and in the past few years his family convinced him to get hearing aids. He said that the hearing aids helped him. He did not have the hearing difficulties when he first learned how to use a computer. Bill said that when he attended workshops, he sat near the front so he could hear the instructor. However, he said that he would not tell an instructor about his hearing difficulties unless the class lasted for more than one session.

Gloria, age 67, was retired. She graduated from high school. She lived with her husband, who was still working. She occasionally spent time with her children, but they did not live nearby. She also enjoyed seeing friends at church. The day of her interview was her first day at Seniorland. She had been immediately recruited for the study by Rosa, who was sitting in the lobby crocheting, while I was in the interview room with another participant. Gloria told me she would like to attend activities at Seniorland because “I get lonely sitting at home.” She had never used a computer, though her grandchildren tried to teach her. She worked at a local hospital, but retired just as they were converting to computerized medical records. “When I retired, they just started bringing in the computers.” She owned a cell phone (did not specify whether smartphone or flip phone), but only used it for telephone calls and not to go online. Even though she said she did not know how to use a computer, she thought that a computer is “a wonderful thing. . . I take a lot of medication, and my brother said, you know, that he looks up on the computer to find out the side effects, so all that kind of stuff I would like to do. . . . I would

like to look and find scriptures from the Bible, and recipes. There's so many things, you know." Her grandson looks up "fun little things" like music for her. She said, "I would like to learn how to operate a computer, and how to search and find things, you know. I hear people saying they get on Google or whatever and find information."

Sarah, age 69, was retired from selling insurance. She graduated from high school. She lived alone and spent a few hours a week with family, about 20 hours a week with friends at church and other social activities, and about 20 hours a week at Seniorland, often playing checkers in the card room. Her late husband used a computer, and she would sometimes use it with his supervision, but since his death several years earlier she had not used a computer. She said that some of her friends have tablets that they play games on, but she is not interested in that. She said, "At my age, a lot of these people have things and they're playing Scrabble on them. I'm sorry, woman – forget it. I don't want one of these little flat things on my lap to sit there and play Scrabble on." She had a laptop at home, but did not use it. She told me, "I have one down there on the treadmill that my daughter gave me or something. She was gonna have it hooked up and whatever, and we never did fool with it. I think that maybe I finally had given it to her and told her to get rid of it, because I didn't want the thing still in my office." She did use a cell phone (flip phone) to make telephone calls. Her daughter showed her how to use her cell phone. She said that she never goes anywhere without her cell phone, because if she falls she needs to be able to call someone. She related that once she was walking her dog and said, "We've gotta go back home and get the cell phone. We're not going without that cell phone." She suffered from seizures and had recently begun driving again after a six-month driving ban after having a seizure. During the card-sorting exercise, regarding the card that said, "Telling me when I am performing a task correctly," she related that her former supervisor recognized

employees with high sales by giving them a plaque. She said that she asked him, “How much are you paying for those plaques?” And I think he said 35 or 40 dollars. I really do. And I said, ‘Hey, do me a favor. Why don’t you buy me U.S. savings bonds? A \$25 savings bond? And you save that money.’”

Shirley, age 73, was a retired bookkeeper who had attended several years of college. She lived with her daughter. She said she spent time on the weekends with family members. Otherwise, during the week, she was a regular at Seniorland, playing checkers in the card room with Sarah and other attendees. In the early 1990s, her employer sent to a class at a community college to learn automated bookkeeping, and that was her first encounter with computers. She said she felt “just a little apprehensive right at first, but I found I could type faster on a computer keyboard than I could on the electric typewriter.” She said that the instructor helped her “to get from one thing to the next. You know, how to get out of one thing, like – we’d learn how to do Word, how to, you know, paste and move words around, and copy and paste and put it over somewhere else if we wanted to, and stuff like that.” She said that besides the instruction in automated accounting, she would have appreciated learning “how to do a lot of the other stuff on the computer, like getting on the Internet and doing other stuff.” She owned a laptop as well as a cell phone (flip phone). She said, “We’ve all done away with home phones, practically, because of, you know, the cell phones.” When asked if she had trouble reading a computer screen, she replied, “After years of staring at [a computer screen] for years, I find that after 30 minutes it seems like it tires my eyes out. It’s tiring.”

Charlotte, age 74, was a retired nurse, who attended three years of college. She lived with her husband, and her grandchildren often visited them. She had recently started attending at Seniorland and spent about 6 hours a week there. Otherwise, she liked to spend time with

friends at church. She had attended a class at a local community college several years before, and students in the class were sent to the computer lab for an assignment, but she said she “didn’t really learn anything” about computers. However, when the hospital where she converted to computerized records in the early 2000s, they brought in instructors to teach the new system to the employees. She and her husband had several computers at home, because her husband liked to build and fix computers. She said she used a computer to shop and play games “to keep my mind clear.” She said that friends and relatives sent her email but, “I don’t send any. I just read what they send me, you know.” Charlotte said she used a Kindle and an iPhone but did not “go into detail” with the iPhone. When she had her first experience with computers in the community college classroom, she said she felt lost and nervous. “I felt like, you know, I’ll never learn this. So, I didn’t really put out too much of an effort because I figured I wouldn’t learn it.” She said that the instructor did not give anyone any personal attention or offer to help anyone. However, when she trained on the computers at work, she did learn the system. The instructors were available outside of class time to answer questions, which helped. She said that her hearing in one ear is not good. “One reason I quit work is my hearing got worse. Let’s see - I was 70 when I quit, but I would like to still be working.” However, the hearing difficulty did not exist when she learned how to use a computer, so it did not affect computer instruction.

Edna, age 75, lived with her husband Bernard and worked part time as a hairdresser. She had been employed as a hairdresser for the past 50 years and used to own a salon. She was also attending a class to prepare her to receive a cosmetology instruction license. She was also active in her church and counseled people in addiction recovery programs and at the local county jail. She stated that she was not proficient with a computer, although she owned a laptop. She felt that it was more important that her youngest daughter, whom she adopted as a young child from

foster care, be computer literate, so she devoted more attention to her daughter's computer skills than to her own computer skills. She said, "I raised my children in New York, so a lot of things were much more advanced than here, where I was born here in Alabama, 'cause I lived there 36 years, and that's where my children went to school. So, my first thing was, you know – she's gonna come up in this household. I really want her to be well educated." Her daughter, who was away at college, had tried to teach her different tasks on the computer. Edna says it was helpful that her daughter knew her interests and could bring up information on the computer that Edna would find interesting. What was not helpful, Edna said, was when her daughter would see that she would be stuck on a task and would say, "Let me do it for you." A cancer survivor, Edna underwent surgery and chemotherapy and, "In between all that stuff, you know, I wasn't up to doing, learning, taking lessons and all that stuff." However, Edna said that when she finishes the cosmetology instructor program, she would like to take a computer class. She had cataract surgery and could read when she wore glasses. Surgery to remove cancer also left her with lymphedema in one of her arms, which caused fatigue if she tried to do anything, such as typing, for too long.

Sylvia, age 78, was retired. She attended a few years of college. She was widowed and lived alone in senior housing. Sylvia attended Seniorland 40 hours a week, volunteering in the Nutrition Center to serve meals and clean up. She said, "I help back in the kitchen. I'd be the last one to leave." When she was not at Seniorland, she volunteered at another local community service organization. She said, "It's very important, I know, to get out of that house when you're alone. That's why I started to come here, just to be around other people, after my husband died. . . I've been here for over 14 years. And then, when I leave here, I don't go home and sit around and cry." Although she did not consider herself proficient with a computer, she did have

exposure to computers at Seniorland when there was one in the Nutrition Center. Senior volunteers were able to experiment with the computer and play games. There was no formal instruction on the computer at that time. When she first approached the computer, she was excited because it was something she wanted to learn. She said she was not nervous or scared. She said, "I'm not one to get scared." She said the other volunteers who used the computer with her were patient with her "because I didn't catch on a lot at the beginning." She thinks she did attend one of the computer classes taught by the LIS students in 2008 at Seniorland, but said that the class schedule coincided with her volunteer time at the Nutrition Center, so she did not attend more than one class. She did use a cell phone (flip phone), but did not have a computer at home, stating, "I want one so bad."

Ida, age 84, was retired from working in a bank. She lived alone, although her daughter and her family lived downstairs from her in their two-family house. She said she did not see them very often because of their work, school, and activity schedules. She spent about three hours a day at Seniorland three days out of the week, mainly attending the morning exercise class. She told me three stories of ICT use and instruction. She first learned how to use a computer when she worked at the bank. She said that at first she was nervous, because her supervisor was a friend of hers, and she "didn't want to be embarrassed that I couldn't learn it." However, as she went through the learning process, she learned that information could only be entered into the system in a certain way, so there was no way to get lost or delete anything from the system, and she became less afraid of making a mistake or breaking the machine. She said she did attend a few of the computer classes taught by the LIS students in 2008 at Seniorland, but said that the instructors had to spend so much time helping the other students in the class that she felt she did not get any attention and stopped attending. She said, "A man took over. I mean,

one of the guys – he asked question, question, questions, and the rest of us sat there. The second ICT device she learned was a laptop computer. She said, “My daughter suggested I get what they call the notebook.” Her daughter took her shopping for a laptop, and then told her, “You take it upstairs and you play with it.” She said, “I was terrified.” She was confused about the icons and where things were located on the screen and how to open programs. Her daughter attempted to help her when she got stuck, but would often just take over and perform the task, and that did not help Ida very much. She said, “I told my granddaughter, I said, ‘Your mother is a teacher, but she’s sure not a good teacher with this thing,’ and she said, ‘Mimi, she teaches kids, not adults.’” She said that more recently, her daughter took her shopping for an iPad. “My daughter and my granddaughter came upstairs and said, ‘Get your checkbook and come on, Mimi. You’re gonna go get an iPad.’ And I said, ‘I don’t want one.’ And they said, ‘Oh, yeah, you’re gonna like it.’ So, we got one, and they said, ‘Take it upstairs and play with it. You can’t hurt it.’ And, so I have played with it, and I am enjoying it. . . . It’s much simpler. You just turn it on, and you’re ready to go.”

Annette, age 87, completed the eighth grade and did not attend high school. She lived alone, with no family nearby. She attended Seniorland in the mornings, four days a week, and enjoyed the exercise classes. Legally blind, Annette rode the Seniorland bus from her apartment in a senior living building to Seniorland and back. Recalling her former position as a machine operator in a paper factory, she said, “I was so excited to have a job. Back then, you know, you couldn’t get a job. And that’s why we went north. They said everything was boomin’ up north, and in the south there wasn’t anything, except farmin’ or something. So, we went up there, and there were jobs everywhere. . . . Well, they hired me right away. And you start to work tomorrow. You didn’t have to go through all this health deal or anything.” Although she had never used a

computer or a cell phone, she was willing to talk about her experience learning how to operate the envelope-folding machine. “We had six weeks training . . . to learn all the orders, how to read the orders. We’d have to order the supplies to be brought to our machine, and how to operate the machine. It was longer than this table here. They’re not now. The newer machines are not – it’s all modern now. . . . It’s all automation. They don’t do the things that I did that many years ago. When I went up there the last time, they took me on a tour of the new plant. I couldn’t believe it.” She also talked about her fairly new flat-screen television and remote control. “I got cable. I don’t have a VCR or anything, and I can – I can count down the numbers on that remote, like you know, down – like if it’s 9, I can count 9 down – I can feel – I feel a lot of that stuff. . . . I don’t know if my daughter and son-in-law was here when I got it. I don’t remember about that. But anyway, once they showed me how to work it, well I could maneuver it then.”

George, age 88, lived alone, having been divorced for the last 40 years. He was a World War II veteran, enlisting in the Navy after dropping out of high school in the 11<sup>th</sup> grade. He said that while he was in the Navy, he took a written exam, which gained him admission into a prestigious university. However, he contracted double pneumonia and ended up not going to college. He spent his first Navy paycheck on gambling and “had to do without cigarettes for two weeks . . . That ended my gambling.” His children lived out of town, so he did not see them very often. He spent about half a day at Seniorland almost every day, and liked to sit in the Seniorland library and use the computers or his own laptop. When not at Seniorland, he liked to visit the local public library. He used to work fixing radios and televisions, but had no experience with a computer until about 2005, when his daughter called him from another state and told him to look outside his door for a package. “She sent me an Inspiron laptop,

refurbished, that she bought through a store in Phoenix, Arizona. . . . And that was my introduction to computers.” He did not know how to use it, so he took it to Seniorland, where one of the employees spent time tutoring him on various tasks. He said he was fascinated by electronics in general, and especially fascinated by what the computer could do. He wanted to learn more, but the employee left the senior center. He attended a few of the computer classes taught by the LIS students in 2008, but said that the instructors had to spend so much time helping the other students in the class with basic functions that he felt he really did not learn much. “He had a table full of more idiots than I was. So, he spent all his time mainly with them.” He used Seniorland’s computers and the public library’s computers as well as his own laptop. He owned a cell phone (flip phone) but did not use it often. He said, “My boy gave it to me in case I’ve fallen and I can’t get up.” He wore two hearing aids but said that he did not have trouble hearing the instructor during his ICT classes.

Clearly, within these stories are examples of different levels of ICT knowledge, ICT instruction settings, and social supportive interactions. This supports the findings of Linton (2009) and Winter (2010), who found that participant stories exhibited different levels of ICT knowledge and contributed to the understanding of participants’ need for social support. Emerging themes emanating from the participant interviews are worth examining for future research and will be elaborated on later in the chapter.

### **Interviews**

Following are the findings from the interviews regarding the three research questions.

#### **Research Question 1**

Table 5-3 shows the findings from the interviews regarding Research Question 1, “What types of social support do older adults consider important when learning to use ICTs?” This

reflects the types of social support participants considered important (found helpful) during their own ICT instruction experiences. The table shows that in the interviews, the helpful social supportive behaviors mentioned most were instrumental support behaviors, followed by emotional and informational. Appraisal support behaviors were not mentioned in the interviews as often.

<u>Theory Element</u>	<u>Number of Participants</u>	<u>Behaviors Mentioned</u>
Emotional	4	Patience
	2	Playing solitaire
	<u>1</u>	Bonding with family member
<b>Total Emotional</b>	<b>7</b>	
Instrumental	9	Demonstrating
	<u>3</u>	Availability outside class
<b>Total Instrumental</b>	<b>12</b>	
Informational	3	Verbal guidance
	2	Lesson repetition
	1	Answering questions
	<u>1</u>	Providing supplemental materials
<b>Total Informational</b>	<b>7</b>	
Appraisal	<u>2</u>	Reassurance of not deleting information
<b>Total Appraisal</b>	<b>2</b>	

**Table 5-3: Interview Responses for Research Question 1 (Consider Important)**

Twelve participants mentioned instrumental support behaviors being important, including instructors demonstrating computer functions. Charlotte said, “They’d be on the computer and have it on the screen, showing us what to do.” George said, “She would show me on the keyboard what to do, and then I’d do it.” This is supported by the work of Harrod (2008), who found that instructor demonstration of lessons was important in ICT instruction for older adults. Participants also considered instructor availability outside of class to be important. Charlotte said, “We were allowed to go down to the computer lab and get them to help us with things we

needed.” This is supported by the work of Bean and Laven (2003), who found that instructor availability was important in ICT instruction for older adults.

Seven participants indicated that emotional support behaviors were important to them. Several participants stated that their instructors were patient with them, which contributed to a positive learning experience. Bill said, “As long as they were patient and did not think it unusual for me to ask questions or laugh at my questions, you know – I think that it helped me to learn. I think it turns you off if a person is not patient or take your questions seriously.” A few participants noted that their instructors helped them to relax and feel better about the computer by playing solitaire. Rosa stated that the instructor introducing her to the game helped her to feel “comfortable around her and the screen.” Dave recounted that the time spent with his son created a positive bonding experience. “A father generally instructs the son on things. Well, here’s the son instructing the father, and he enjoyed it, and I enjoyed it too.” This is supported by the work of Mayhorn, Stronge, McLaughlin, and Rogers (2004), who found that a positive initial learning experience is important in ICT instruction for older adults. As well, they found that older adults benefited from playing solitaire on the computer, as it allowed them to practice pointing, clicking, and dragging.

Seven participants mentioned informational support behaviors as being important. Verbal guidance was considered important. Participants stated that instructors “went over it step by step” (Peggy) or would “talk me through it” (Sophia). Related to verbal guidance was repetition of material covered. Dave stated that repetition was important because “it didn’t come naturally to me.” Answering questions was also important. Shirley stated, “If you had a problem you could just raise your hand and she’d come over and talk to you about it or something.” Participants also mentioned provision of supplemental materials. Blanche said, “He provided me

with some of those books.” This is supported by the work of Bean (2003), Bean and Laven (2003), and Charness and Boot (2009), who found that informational support including provision of supplemental materials was important in ICT instruction for older adults.

The appraisal support behavior that two participants mentioned as being important was reassurance. Participants who received ICT instruction at work expressed concern about accidentally deleting data, and instructor reassurance was important. Betty said, “I was in a large group, and we were all afraid that when we went into the computer we’d delete patient information. . . . It took us a while to be reassured that because we mashed the wrong button we would not delete stuff. . . . [The instructor] just reassured us, going through the information – reassuring us over and over that we would not delete information.” This is supported by the work of Harrod (2008), who found that reassurance that computers or data would not easily be damaged was important in ICT instruction for older adults.

In summary, during the interviews, more participants mentioned instrumental support behaviors, including demonstrating tasks and instructor availability, as being the most helpful during their own ICT instruction experiences. Mentioned less often in the interviews were emotional support behaviors (patience, playing games, and family bonding) and informational support behaviors (verbal guidance, lesson repetition, answering questions, and providing supplemental materials). Mentioned least often in the interviews were appraisal support behaviors (reassurance of not damaging computers or data). This suggests that in an ICT instruction setting, the instrumental support element of Social Support Theory is important.

## **Research Question 2**

Table 5-4 shows the findings from the interviews regarding Research Question 2, “What types of social support do older adults seek when learning to use ICTs?” This reflects what

social support types participants desired during ICT instruction. Participants were asked about what behaviors ICT instructors failed to demonstrate that could have been more helpful.

<u>Theory Element</u>	<u>Number of Participants</u>	<u>Behaviors Mentioned</u>
Emotional	<u>0</u>	None mentioned
<b>Total Emotional</b>	<b>0</b>	
Instrumental	5	More formal instruction
	2	More time with instructor
	1	Slower pace
	<u>1</u>	Allow student to perform tasks
<b>Total Instrumental</b>	<b>9</b>	
Informational	<u>0</u>	None mentioned
<b>Total Informational</b>	<b>0</b>	
Appraisal	<u>0</u>	None mentioned
<b>Total Appraisal</b>	<b>0</b>	

**Table 5-4: Interview Responses for Research Question 2 (Would Seek)**

The table shows that in the interviews, most participants did not talk about social supportive behaviors they desired but did not receive from ICT instructors. However, those who did talk about desired behaviors mentioned instrumental support behaviors. Emotional, informational, and appraisal support behaviors were not mentioned in the interviews as behaviors that participants wished their ICT instructors had displayed.

Participants remarked that they would have liked more formal instruction and more time with instructors. Some participants who learned in formal classes wanted additional instruction on more advanced tasks. Shirley said, “I would have liked to have gotten into different things in the computer, but I didn’t, because the course didn’t consist of anything but what we did.” Peggy said, “Maybe a few more classes.” Some participants who learned from peers or family members said they wanted more formal instruction. Ida said, “I should have taken a class!” Bernard said, “If I’d had an instructor, I might have learned more.” Shirley said that she desired

a slower pace of instruction, and Bill said that he desired practice time to master tasks. This is supported by the work of Eaton and Salari (2005) and Harrod (2008), who found that older adults were interested in formal computer instruction sessions. It is also supported by the work of Bean (2003), who found that older adults desired a slower pace of instruction, and Bean and Laven (2003) and Mayhorn et al. (2004), who found that older adults desired separate classes for novices and more advanced computer users.

In summary, during the interviews, more participants mentioned instrumental support behaviors, including more formal instruction, time with instructors, a slower pace, and more practice time, as being behaviors that were not displayed but desired during their own ICT instruction experiences. Not mentioned in the interviews as being desired but not received were emotional, informational, or appraisal supportive behaviors. This suggests that in an ICT instruction setting, the instrumental support element of Social Support Theory is desired.

### **Research Question 3**

Table 5-5 shows the findings from the interviews regarding Research Question 3, “How do older adults perceive the impact of age-related physical disability on social support seeking when learning to use ICTs?” This reflected the impact that participants perceived that a physical disability had on their social support seeking. Participants were asked if they have a disability affecting vision, hearing, or dexterity/mobility, and then were asked if they would disclose disabilities to an ICT instructor. Most participants reported having an age-related disability affecting vision, hearing, or dexterity or a combination of types. One participant reported a memory problem. A few reported that their disabilities were present during their ICT instruction, but most reported that their ICT instruction preceded the onset of their disabilities.

Most described the level of disability as mild to moderate and related to aging, placing them within the ELAC population.

<u>Theory Element</u>	<u>Number of Participants</u>	<u>Behaviors Mentioned</u>
Emotional	$\frac{1}{1}$	Patience
<b>Total Emotional</b>	<b>1</b>	
Instrumental	$\frac{1}{1}$	Showing how to enlarge font
<b>Total Instrumental</b>	<b>1</b>	
Informational	$\frac{0}{0}$	None mentioned
<b>Total Informational</b>	<b>0</b>	
Appraisal	$\frac{0}{0}$	None mentioned
<b>Total Appraisal</b>	<b>0</b>	

**Table 5-5: Interview Responses for Research Question 3 (Disability Impact)**

Only two participants mentioned a disability having an impact on social support seeking, with one being an emotional element of social support and another being an instrumental element of social support. Cora stated that upon disclosing her memory disability to her instructor, she appreciated the instructor’s patience with her. “She told me not to worry about it. She had time to work with me until I got it.” Bill stated that it was helpful when someone showed him how to increase the font on his computer. “It used to give me fits, because I didn’t know how to enlarge the print. Someone finally showed me.” These responses support the work of Kelly and Hibner (2005), who found that ICT instruction should take into account physical declines associated with aging. Reticence to disclose disabilities to ICT instructors is supported by the work of Goldsmith (2004), who found that people may not seek support because it would mean having to disclose a stigmatizing condition or a loss of independence, control, or competence.

## **Emerging Themes from the Interviews**

Appendix E shows the codebook created for the themes present in the interviews. Themes included ICT instruction settings, emotions during ICT instruction, and interest in future ICT classes.

### **ICT Instruction**

#### ***ICT Instruction Settings***

Participants were asked about ICT instruction settings. Settings included work Seniorland, college classes, at home with family, at a computer lab in prison, at another senior services agency, and self-teaching.

Participants who said they received ICT instruction at work included Peggy, Marie, Blanche, Betty, Sophia, Bill, Charlotte, Sophia, and Ida. Peggy, Marie, Betty, and Charlotte worked in hospitals that were converting to computerized patient systems and either sent employees to classes or brought instructors in to train employees. Sophia said that an instructor was not brought in, but she did not have many problems because she already knew how to use a computer and could figure out the new system herself. Most participants who learned at work said they were afraid of making mistakes and needed reassurance (emotional support) that they would not delete data. This supports the work of Ray (1987), who said that people in a work atmosphere seek social support to deal with work stress and uncertainty.

Participants who said they received ICT instruction at Seniorland included Rosa, Florence, Sylvia, Ida, and George. Rosa and Florence completed group classes delivered at Seniorland by college students. Ida said she attended a few classes, but said that “a man took over. He asked questions ... and the rest of us sat there.” George received individual instruction from a Seniorland employee and then attended a few classes, but remarked that, “[The instructor]

had a table full of more idiots than I was. So, he spent all his time mainly with them.”

Participants who learned at Seniorland mainly expressed appreciation for instructors who came in from outside (university students) who brought computers with them for use in the classes. As well, they appreciated when instructors either from Seniorland (employees) or outsiders (university students) spent time with them (instrumental support). This supports the work of Eaton and Salari (2005), who found that ICT instruction was optimized when the environment was conducive to learning, with equipment and instructors available.

Participants who said they received ICT instruction in college classes included Shirley, Peggy, and Dave. Shirley’s employer sent her to the class to learn computerized accounting. Peggy, who also had ICT instruction at work, was taking classes toward an associate’s degree. Dave took a technology class in a postgraduate program. Participants who learned in college classes mainly said they were concerned about keeping up with the class and the lack of individual attention from the instructor (instrumental support). This supports the work of Shoemaker (2003), who found that older adults receiving ICT instruction in an academic atmosphere needed extra social networking support and opportunities to practice.

Participants who said they received some ICT instruction by family members included Dave, Sarah, Edna, and Ida. All received ICT instruction by a son or daughter. Ida had learned how to use a computer at work but was instructed by her daughter when she later bought a laptop and then an iPad. Dave was taking a technology class in a postgraduate program, but needed supplemental tutoring at home, which his son provided. Participants who learned at home from family members mainly said they appreciated the individual attention and bonding experiences (emotional support). This supports the work of Mori and Harada (2010), who found that

intergenerational bonding enhanced the ICT learning experiences for older adults learning from family members.

Other settings in which ICT instruction occurred included another senior services agency, a prison, and self-teaching. Bernard said his initial encounters with a computer were in prison, where fellow inmates in a computer lab coached him on introductory skills such as typing, using a mouse, and opening and closing programs. Bernard said that he appreciated their patience with him (emotional support). This supports the work of Winters (2000), who found that educational programs in correctional institutions provide transforming experiences for inmates, encouraging discipline and motivation for self-improvement. Cora received individual tutoring at a senior services agency, where an employee was able to spend time with her. She said that she appreciated the patience that the instructor displayed around Cora's memory issues and the slow pace she needed (emotional support). This supports the work of Eaton and Salari (2005), who found that people learning at a senior services agency appreciated instructor availability. Ida said that although her daughter taught her some functions on her laptop and iPad, a lot of her learning came from "playing with it" herself. Sophia said that she taught herself how to use a computer by buying a computer and books and stepping through the books. She also said that when the hospital where she worked later converted to a computerized system, she was primarily on her own. Participants who taught themselves mainly said they were motivated to learn but had others available for help (informational and emotional support). This supports the work of Mori and Harada (2010), who found that people who were learning to use ICTs on their own benefited by having other people available for help.

### ***Emotions During ICT Learning***

Participants were asked how they felt before and after ICT instruction, and also if they were nervous or scared. Participants expressed a variety of emotions that they had felt before and after ICT instruction. Some terms used by participants included *embarrassed*, *afraid*, *scared*, *terrified*, *worried*, *apprehensive*, *lost*, *confused*, *shy*, *uncomfortable*, *nervous*, *complicated*, *weird*, and *anxious*. Marie said, “I was embarrassed to ask questions.” Betty said, “We were all afraid that when we went into the computer we’d delete patient information. That’s what scared us the most.” Bill said, “I was afraid that I might touch the wrong thing and wiped out what I had typed.” Blanche said, “I was scared at first because I was afraid that I would push the wrong button or do the wrong thing. I didn’t want to mess the whole system up.” Ida said, “I was terrified. I was nervous because I hadn’t worked in a long time.” Blanche also said, “I was worried that I might break it or I might put something in there that was incorrect.” Others using the above terms described similar fears about making mistakes or losing data in a work environment. This supports the work of Ray (1987) who found that people in a work environment seek emotional support due to concerns about job performance. Cora, who was not learning at work but was concerned about her memory issues, said, “I felt kind of weird. I felt like I wasn’t going to learn it.” Bernard, who learned in a prison computer lab, said, “It was a little complicated at first, but you had to take time and learn.” Thus, even when not in the work environment, people may have other issues leading them to seek emotional support while learning (Mori & Harada, 2010; Shoemaker, 2003).

Other participants used different terms to describe their emotions at the beginning of their ICT learning experiences. These included terms such as *excited*, *good*, and *fascinated*. Annette, who admitted she did not know how to use a computer but talked about learning how to use

machines at work, said, “I was so excited to have a job,” and said that when she first learned how to use a television with a remote control, “I was excited to get it.” Sylvia said she was excited about the computer in her work room at Seniorland, “‘Cause I thought I could really just go and learn.” Florence said, “I felt good, I mean, ‘cause I really wanted to learn the computer.” George said, “I was fascinated with it – what you had to know in order to operate the thing.” Sophia, who bought a computer and books and taught herself, said, “Oh, I was fascinated. I loved it.” This supports the work of Wandke, Sengpiel, and Sönksen (2012), who found that older adults had positive feelings toward learning how to use ICTs because they wanted to access the Internet and communicate with friends and family members who were online.

Likewise, when asked if they were nervous or afraid about making a mistake, some participants said they were *not afraid of making mistakes* or *not nervous*. Bernard said, “You don’t know nothing about a computer when you first start. I made a lot of mistakes, because if you hit the wrong key, sometimes you could turn it off. I didn’t feel bad about [making a mistake] ‘cause I was just learning. I wasn’t getting graded or nothing for it, so I’d just take my time and learn how to do it correctly.” Annette said, “I’ve never been a nervous type person. When I could see, I would just – you know, I was ready to try anything.” Sylvia said, “I’m not one to get scared.” This supports the work of Wandke et al. (2012), who found that older adults may display a resilient attitude when learning and are not necessarily intimidated by learning new things.

Participants reported that after ICT instruction, they felt *good, confident, comfortable, great, happy, pleased, and accomplished*. Bernard said, “I felt pretty good about myself, ‘cause I wanted to always learn how to type, and it was a good feeling knowing how to, you know.” Ida and Blanche said they felt more confident after learning at work. Ida said, “I knew how to do it,

so I was confident with it.” Blanche, who was afraid of pressing the wrong button and messing up the computer system, said that she felt “more confident” after instruction. “I learned to fix it myself. They showed me how I could, you know, reverse something, and just go ahead and go on with my functions.” Peggy, who learned both at work and at school, said, “I felt more comfortable with it.” She also said, “I felt like I had really accomplished something.” This supports the work of Compeau and Higgins (1995), who found that people who learned how to use ICTs felt better about their abilities after the learning experience.

However, some said they were *lost, disappointed, or needed practice*. Charlotte, who took a class at a community college, said she felt “Lost. I felt like, you know, I’ll never learn this. So I didn’t really put out too much of an effort because I figured I wouldn’t learn it.” George said he felt “Disappointed, ‘cause I hadn’t learned all I need to know.” Bill said, “I felt like I needed to practice... It took a while to become confident in it.” Smith, Moores, and Chang (2005) stated that after people learn how to use ICTs, they realize how much they do not know.

### **Interest in Future ICT Instruction**

Several participants expressed interest in future ICT instruction sessions. Shirley said, “I would like to learn how to do a lot of the other stuff on the computer,” and Peggy said, “I’d like to update my skills and knowledge.” Florence was interested in ICT classes at the public library, “But I never could get transportation backwards and forwards to go to the library to learn it,” indicating that instrumental support (transportation) was an important issue and desirable service for her future ICT instruction experience. Blanche expressed a desire for more specific knowledge on “how to set up a spreadsheet. . . to keep track of my sugar, you know – what I ate that day, the day before, and what my blood sugar was,” indicating that disability impacted her future ICT instruction experience, in that she wanted to obtain additional ICT instruction in order

to help manage her diabetes.” This supports the work of Smith, Moores, and Chang (2005), who found that people who learned how to use ICTs realized they needed to learn more.

### **Card-Sorting Exercises**

Following are the findings from the card-sorting exercises regarding the three research questions.

#### **Research Question 1**

The question of “What types of social support do older adults consider important when learning to use ICTs?” was further explored using the card-sorting exercises in order to supplement the information received during the interviews. Table 5-6 shows the findings from the card-sorting exercise regarding Research Question 1. In card-sorting exercise #1, participants were asked to rank ICT instructor behaviors in order of importance. The table shows that the support type that participants generally considered most important was informational support. However, participants unanimously considered other individual support behaviors to be important. Emotional support behaviors chosen as most important included “Displaying a good sense of humor.” George said, “I live in a good humor,” and, “You get along better if you’re happy.” This is supported by the work of Mayhorn et al. (2004), who considered positive emotional experiences important in the ICT learning experiences of older adults. Considered least important was “Gently touching me on the shoulder,” with only six participants considering this behavior to be important.

<b><u>Theory Element</u></b>	<b><u>%</u></b>	<b><u>Number of Participants</u></b>	<b><u>Cards</u></b>
Emotional	73%	20	“Displaying a good sense of humor”
		18	“Using a gentle tone of voice with me”
		16	“Understanding/accepting my situation”
		8	“Comforting me”
		6	“Gently touching me on the shoulder”

Instrumental	80%	17	“Providing me with equipment to use”
		17	“Demonstrating tasks on instructor’s computer”
		14	“Taking over and performing tasks on my computer”
Informational	90%	19	“Providing instructional materials and handouts”
		18	“Answering questions I ask”
		18	“Providing verbal guidance”
		17	“Using familiar analogies to explain unfamiliar concepts”
Appraisal	84%	20	“Telling me when I am performing a task correctly”
		20	“Redirecting me when I make a mistake”
		15	“Validating my prior experience”
		12	“Acknowledging my prior ICT experience”

**Table 5-6: Card-Sorting Responses for Research Question 1 (Consider Important)**

Instrumental support behaviors were also considered important by most participants. “Demonstrating tasks on instructor’s computer” was considered important. Some participants said that their instructor did not exhibit this behavior, because tasks were often demonstrated on their own computers rather than the instructor’s computer, but they would consider it important in some circumstances. As George said, “[My instructor] never did that. But that could be important. But if you didn’t have a computer, it would be very important, if you didn’t have yours, would it?” This supports the work of Harrod (2008), who considered instructor demonstration of lessons to be important in ICT instruction. Another instrumental support behavior chosen as important by most participants included “Providing me with equipment to use.” However, during their think-alouds, some participants interpreted the statement on the card as providing equipment for them to keep, in which case they felt being provided a computer was not important if they already owned a computer. Remarks included, “You mean, like a new computer?” (Blanche) and “That’s a little important, because I already have it” (Dave). A few participants considered “Taking over and performing tasks on my computer when I am confused or stuck” as not important at all. Dave said, “Doing the task for me I’d say is not really all that

important, because I'm supposed to learn. . . . It was more important to let me do the task than taking over." Peggy said, "I'd rather be walked through it." However, a few considered it important, with Edna stating, "When you take over and show me a couple of times, and then I can learn how to practice."

Regarding informational support, most participants considered "Providing instructional materials and handouts" and "Answering questions I ask" as most important. This is congruent with the findings of Bean (2003), Bean and Laven (2003), and Charness and Boot (2009), who considered provision of supplemental learning materials to be important in ICT instruction for older adults. Also considered important was "Providing verbal guidance." George remarked, "I listen very well. Sometimes it don't stick, but that's important."

Within the appraisal support type of behaviors, all participants considered "Telling me when I am performing a task correctly" as important. George stated, "Telling me I'm doing the right thing – that's very important – that's urging you on." They also considered "Redirecting me when I make a mistake" as important. Edna said, "That's important, 'cause I probably, you know, make quite a few at first." This supports Harrod's (2008) findings that older adults appreciated reassurance of their abilities and of the durability of ICTs during instruction.

Card-sorting exercise responses were examined in light of the interview responses. In most cases, the card-sorting exercise responses corroborated the interview findings. However, in a few cases, there were discrepancies. Two participants mentioned an informational support behavior (verbal guidance) as being helpful in the interview but deemed it "A Little Important" in the card-sorting exercise. Another participant mentioned an instructor taking over and performing tasks as unhelpful in the interview, but ranked it as "Somewhat Important" in the card-sorting exercise.

In summary, the card-sorting exercises corroborated the interview findings in that they attributed the highest importance to an instructor having a good sense of humor, providing supplemental materials, praising, and redirecting. The card-sorting exercises served to provide additional insight into specific behaviors that participants considered most important.

### **Research Question 2**

The question of “What types of social support do older adults seek when learning to use ICTs?” was further explored using the card-sorting exercises in order to supplement the information received during the interviews. Table 5-7 shows the findings from the card-sorting exercise regarding Research Question 2. In card-sorting exercise #2, participants were asked to rank ICT instructor behaviors in order of how often they would seek each behavior in a future class, either Always, Often, Sometimes, Seldom, or Never. The table shows that the support type that participants generally said that they would seek was informational support. However, participants unanimously chose other individual support behaviors as behaviors that they would seek from a future ICT instructor. Participants chose three of the five emotional supportive behaviors as being sought most often. This supports the findings of Mayhorn et al. (2004), that older adults sought a positive learning experience with ICT instruction. Participants chose “Gently touching me on the shoulder” least as a behavior that they would seek. George remarked, “My wife left me in 1974, so I really don’t want any.” Peggy said, “I like these behaviors if it’s something to do socially, but if I’m trying to learn something, then that would be kind of like, to me, patronizing me.” This supports the work of Goldsmith (2004), who found that some behaviors meant by support providers to be supportive could be interpreted by support seekers to be unsupportive or patronizing.

<u>Theory Element</u>	<u>%</u>	<u>Number of Participants</u>	<u>Cards</u>
Emotional	79%	20	“Displaying a good sense of humor”
		20	“Understanding/accepting my situation”
		20	“Using a gentle tone of voice with me”
		13	“Comforting me”
		6	“Gently touching me on the shoulder”
Instrumental	80%	18	“Demonstrating tasks on instructor’s computer”
		16	“Providing equipment for me to use”
		14	“Taking over and performing tasks for me”
Informational	96%	20	“Answering questions I ask”
		20	“Providing verbal guidance”
		19	“Using familiar analogies analogies to explain unfamiliar concepts”
Appraisal	83%	18	“Providing instructional materials and handouts”
		19	“Telling me when I am performing a task correctly”
		19	“Redirecting me when I make a mistake”
		14	“Acknowledging my prior ICT experience”
		14	Validating my prior experience”

**Table 5-7: Card-Sorting Exercise Responses for Research Question 2 (Would Seek)**

Instrumental support behaviors that participants said they would seek most often included “Demonstrating tasks on instructor’s computer” and “Providing me with equipment to use.” Sarah said, “How am I gonna learn to do things if I don’t have the stuff to do it with?” However, some participants stated that they would not seek “Providing me with equipment to use” because they interpreted this statement as providing equipment them for them to keep. Edna remarked, “I already have my computer, so I don’t need this.” Participants said that they would seek “Taking over and performing tasks for me” the least often of the instrumental support behaviors. Findings support the work of Harrod (2008), who found that older adults appreciated instructor demonstration of tasks during ICT instruction.

The informational support behaviors of “Answering questions I ask” and “Providing verbal guidance” were considered by all participants to be behaviors they would seek from a future ICT instructor. Dave said, “We always want to get questions answered,” and Ida said, “I always want an answer!” Blanche stated, “I get irritable when people don’t answer me. I may raise my voice a little bit.” “Using familiar analogies” was sought by most participants. George stated, “When you compare, it usually sticks better.” Likewise, “Providing me with instructional materials and handouts” was sought by most participants. These findings support the work of Mayhorn et al. (2004), who found that older adults sought an ICT learning experience relevant to their needs.

The appraisal support behaviors of “Telling me when I am performing a task correctly” and “Redirecting me when I make a mistake” were considered by almost all participants to be behaviors they would seek from a future ICT instructor. George stated, “You can’t learn if you don’t get corrected.” Findings support the work of Harrod (2008), who found that older adults sought reassurance and redirection during ICT instruction.

Card-sorting exercise responses were examined in light of the interview responses. In all cases, the card-sorting exercise responses corroborated the interview findings, with participants choosing informational and emotional support behaviors as instructor behaviors that they would seek from a future ICT instructor.

In summary, the card-sorting exercises corroborated the interview findings in that they would seek a good sense of humor, understanding/accepting, a gentle tone of voice, answering questions, and providing verbal guidance from a future ICT instructor. The card-sorting exercises served to provide additional insight into specific behaviors that participants would seek.

## **Think-Alouds**

Most of the participants did think-alouds during the card-sorting exercises. Think-alouds allow the collection of additional data to explore how and why participants arrive at their answers (Kaklamanou et al., 2013). Most think-alouds involved verbalizing the name of the section of the board in which the participant was going to place the card. Other think-alouds involved expounding on a response, telling a related story, or voicing a problem understanding the card. Problems understanding cards are covered in the section on limitations to the study.

## ***Emotional***

Many participants reacted negatively to “Gently touching me on the shoulder.” Rosa said “Wooh, that sounds like harassment,” and George said, “Touching don’t turn me on. My wife left me in 1974, so I really don’t want any.” Peggy stated, “I like these behaviors if it’s something to do socially, but if I’m trying to learn something, then that would be kind of like, to me, patronizing me.” Blanche related the question to her ICT instructor and said, “He did not touch me whatsoever. He probably would have gotten in trouble.” This was similar to findings of Boutin-Foster (2005) and Range, Walston, and Pollard (1992), who found that well-meaning comments and behaviors were sometimes rated as unhelpful by intended recipients.

Some participants stated they felt that “Comforting me” was not important, or they stated that their ICT instructors did not comfort them during the learning process. Ida stated that after her daughter took her to buy a laptop, “She didn’t do that. She just said, ‘Take it upstairs and play with it.’” George said, “I don’t need a lot of comforting. Just tell me what I’m doing wrong, and let’s go from there.” Others said, “Nobody ever comforted me” (Blanche) and, “Well, I’m not used to being comforted” (Annette). Sylvia said, “Sometimes you don’t need no comforting. You need to do your work.” This is similar to findings of Boutin-Foster (2005) in

that support seekers considered some behaviors to be in excess of what would be needed in their circumstances.

Most participants felt that “Displaying a good sense of humor” was important. Edna stated that displaying a good sense of humor was important, but she would not always seek it. “I always feel like if somebody wants to make you laugh all the time, they’re hiding something.”

Most participants felt that “Using a gentle tone of voice” was important. Blanche stated, “I wouldn’t want them to be rude and harsh, because that would shut me down.” However, a few felt that a gentle tone of voice was not always necessary. George said, “Sometimes, a good yell will straighten you right up.” Edna stated, “You know, you can be yourself. If you talk loud, that’s okay.”

Most participants felt that “Understanding/accepting my situation” was important. Edna said, “If you’re gonna teach me, my situation might get in the way” and labeled it as somewhat important.

In summary, participants responded positively in their think-alouds to most emotional support behavior cards. This is similar to findings of Mayhorn et al. (2004), that older adults appreciated a positive ICT learning experience. The emotional behaviors eliciting negative reactions included “Gently touching me on the shoulder” and “Comforting me,” which participants felt could be excessive or patronizing, similar to the findings of Boutin-Foster (2005).

### ***Instrumental***

Most participants stated in their think-alouds that they felt that “Providing me with equipment to use” was important. Some interpreted the statement to mean providing equipment during instruction. Sarah said, “How am I gonna learn to do things if I don’t have the stuff to do

it with?” Some participants interpreted the statement as providing equipment to keep, in which case they felt it was not important if they already owned a computer. Edna stated, “That’s a little important, because I already have it.”

Most participants said they felt that “Demonstrating tasks for me on instructor’s computer” was important. However, some felt that was not helpful. Bill stated, “I need it done on mine.” Ida said, “If it wasn’t just like mine, I don’t want to fool with theirs.” Some participants said in their ICT instruction experience, tasks were not demonstrated on an instructor’s computer but rather on the participant’s computer. George said, “If you didn’t have a computer, it would be very important.” Blanche said, “It was on the computer [my employer] provided for me.” This is similar to the findings of Harrod (2008), that older adults appreciated instructor demonstration of tasks during ICT instruction.

“Taking over and performing tasks for me on my computer when I’m confused or stuck” was considered by many participants in their think-alouds as not important or a behavior that they would not seek. Dave stated, “Doing the task for me I’d say is not really all that important, because I’m supposed to learn. . . . It was more important to let me do the task than taking over.” Peggy said, “I’d rather be walked through it.” However, a few did think it was important. Edna stated, “When you take over and show me a couple of times, and then I can learn how to practice.” Similar to findings of Boutin-Foster (2005), taking over when it is not needed resulted in support seekers feeling that their independence was not being respected.

In summary, participants responded positively in their think-alouds to most instrumental support behavior cards. This is similar to findings of Mayhorn et al. (2004), that older adults appreciated a positive ICT learning experience. The instrumental behavior eliciting the most negative reactions included “Taking over and performing tasks on my computer when I am

confused or stuck,” which participants could interpret as patronizing, similar to the findings of Boutin-Foster (2005).

### ***Informational***

Most participants responded to informational behavior cards positively. “Answering questions I ask” was considered by most participants to be an important ICT instructor behavior and one they would seek from a future instructor. Remarks included, “Well, we always want to get questions answered” (Dave) and, “I always want an answer!” (Ida). Similar to findings of Mayhorn et al. (2004), participants appreciated a positive learning experience that included having their questions answered.

Most participants responded positively to “Providing verbal guidance (stepping through a task with me).” George said, “I listen very well. Sometimes it don’t stick, but that’s important.” Likewise, most participants responded positively to “Using familiar analogies to explain unfamiliar concepts” was important. George stated, “When you compare, it usually sticks better.” Most participants also considered “Providing me with instructional materials and handouts” as an important ICT instructor behavior and one they would seek from a future ICT instructor. Dave said, “I like to study on my own, too,” and Edna said, “So I can study at home.” Similar to the findings of Bean (2003), Bean and Laven (2003), and Charness and Boot (2009), participants wanted provision of supplemental materials to be a part of their ICT instruction experience.

In summary, participants responded positively in their think-alouds to the informational support behavior cards. This is similar to findings of Mayhorn et al. (2004), that older adults appreciated a positive ICT learning experience.

## *Appraisal*

Many of the think-alouds regarding “Acknowledging my prior ICT experience (not starting at square one if we don’t need to)” resulted from misreading or misunderstanding the card. Some participants did say that they thought the behavior was important or was something they would seek from an ICT instructor. Blanche stated, “Well, we needed to start at square one, so I’m going to say it was important for him to acknowledge my prior inability to use a computer.” A few participants said they considered this behavior to not be important, because they did not have any prior ICT experience and needed to start at square one. Annette said, “Well, that’s not important, because I don’t know anything about it, I guess, I would say.” However, in their think-alouds, some participants focused on the “Not starting at square one” part of the card. Ida said, “Not starting at square one . . . I don’t ever want that.” Similar to the findings of Bean and Laven (2003) and Mayhorn et al. (2004), participants expressed desiring a positive learning experiences that considered their learning levels.

Similarly, some think-alouds regarding “Validating my prior experience (Not patronizing me)” resulted from misreading or misunderstanding the card. Some participants felt that the behavior was an important ICT instructor behavior or one that they would seek. However, some participants focused on the “Not patronizing me” part of the card. Ida said, “I don’t want that.” Blanche stated, “That didn’t happen. He didn’t do that.” This is similar to the findings of Boutin-Foster (2005) and Goldsmith (2004), that behaviors intended as supporting may be interpreted by a support seeker as patronizing and considered to be unsupportive.

Most participants felt that “Telling me when I am performing a task correctly” was important. George said, “A little pep talk always helps.” Peggy stated, “I like to be told if I’m doing something correctly,” and Blanche said, “You need to know if you’re doing it right.”

Likewise, most participants felt that “Redirecting me when I make a mistake, from incorrect to correct” was important. Sarah said, “I definitely would want to be directed in the correct thing.” George said, “You can’t learn if you don’t get corrected.” This supports the findings of Harrod (2008), that older adults appreciated reassurance and redirection during ICT instruction.

### **Additional Cards**

Two participants added cards during the card-sorting exercises. Dave added a “Letting me do the task” card to the “Very Important” section of the board in card-sorting exercise #1. He stated, “In other words, letting me play with it and figure out how – what I’m doing. That was very important to me.” Bill added an “Allowing me to practice” card and a “Be patient with me” to the “Very Important” section of the board in card-sorting exercise #1. He stated, “Allow me to practice or to do it for myself while you watch me.” He also added a “Patience” card to the “Always” section of the board in card-sorting exercise #2. He stated, “You’ve got to be patient because I’m trying to learn.” Similar to the findings of Boutin-Foster (2005), these participants appreciated their independence being respected by support providers.

### **Summary**

The findings in this study revealed participants with different levels of ICT knowledge and ICT instruction settings, supporting the findings of Linton (2009) and Winter (2010), that participants telling their stories contributed to understanding of participants’ need for social support. Emerging themes emanating from the participant interviews include ICT instruction settings, emotions during ICT learning, and interest in future ICT instruction.

### **Research Question 1**

This section summarizes the findings for Research Question 1, “What types of social support do older adults consider important when learning to use ICTs?” During the interviews,

more participants mentioned instrumental support behaviors, including demonstrating tasks and instructor availability, as being the most helpful during their own ICT instruction experiences. Mentioned less often in the interviews were emotional support behaviors (patience, playing games, and family bonding) and informational support behaviors (verbal guidance, lesson repetition, answering questions, and providing supplemental materials). Mentioned least often in the interviews were appraisal support behaviors (reassurance of not damaging computers or data). This suggests that in an ICT instruction setting, the instrumental, emotional, and informational support element of Social Support Theory are considered the most important.

The card-sorting exercises corroborated the interview findings in that participants attributed the most importance to an instructor having a good sense of humor (emotional support) and providing supplemental materials (informational support). They also revealed that participants considered praising and redirecting (appraisal support) to be important. The card-sorting exercises served to provide additional insight into specific behaviors that participants considered most important.

## **Research Question 2**

This section summarizes the findings for Research Question 2, “What types of social support do older adults seek when learning to use ICTs?” During the interviews, most participants mentioned instrumental support behaviors, including more formal instruction, time with instructors, a slower pace, and more practice time, as being behaviors that were not displayed but desired during their own ICT instruction experiences. Not mentioned in the interviews as being desired but not received were emotional, informational, or appraisal supportive behaviors. This suggests that in an ICT instruction setting, the instrumental support element of Social Support Theory is desired.

The card-sorting exercises supplemented the findings from the interviews, with participants choosing behaviors such as a good sense of humor, understanding/accepting, a gentle tone of voice, answering questions, and providing verbal guidance as behaviors they would seek from a future ICT instructor. The card-sorting exercises served to provide additional insight into specific behaviors that participants would seek.

### **Research Question 3**

This section summarizes the findings for Research Question 3, “How do older adults perceive the impact of age-related physical disability on social support when learning to use ICTs?” Eleven participants mentioned having mild to moderate difficulty with vision, hearing, or dexterity, but most said their difficulties were not present during ICT instruction or would not affect ICT instruction. One participant had a severe visual deficit rendering her legally blind. Another participant mentioned having mild to moderate memory difficulties. During the interview, two participants mentioned their physiological difficulties having an impact on social support seeking, with one being an emotional element of social support and another being an instrumental element of social support. These findings supported the work of Kelly and Hibner (2005), who found that ICT instruction with older adults is enhanced when taking into account physical declines associated with aging. Participants stating that their disabilities probably would not interfere with their ICT learning is similar to the findings of Goldsmith (2004), who found that people may not seek support because it would mean having to disclose a stigmatizing condition or a loss of independence, control, or competence.

This chapter has described the results of this study. The following chapter presents a discussion of the findings, impact on the theory, and implications for future research.

## CHAPTER 6

### DISCUSSION AND CONCLUSIONS

#### **Introduction to the Discussion and Conclusions**

The final chapter of the dissertation contains a discussion of the findings from the video analysis conducted, and the interviews and card-sorting exercises administered in the study and their implications for Social Support Theory. It begins with a restatement of the problem addressed by the study and then moves to a discussion of the findings positioned within the existing literature with conclusions of the study. This is followed by implications and recommendations regarding theory, practice, human-computer interaction and ICT design, and LIS education, the limitations of the study, and emerging themes with recommendations for further research.

#### **Summary**

The purpose of this study was to investigate the applicability of Social Support Theory to older adults and ICT instruction. The experience of 20 older adults, age 60 through 88, was explored to elicit the experiences of social support seeking during ICT instruction.

The older adults in this study generally considered instrumental, informational and appraisal support behaviors the most important and what they would seek when learning to use ICTs. This included having instructors demonstrate tasks and answer their questions, as well as provide verbal guidance to step them through tasks. This supports the work of Harrod (2008) and Mayhorn et al. (2004), who found that older adults appreciated a positive ICT learning experience relevant to their needs. When they did something correctly, they wanted to know that

they were doing it correctly, and when they make a mistake, they wanted to be redirected to the correct way to perform the task. This supports the work of Harrod (2008), who found that older adults desired reassurance and gentle redirection during ICT instruction. Although certain emotional support behaviors were considered helpful, these behaviors occurred in the context of other types of support, mainly informational or appraisal support. Participants talked about Instructors displaying patience or understanding while verbally guiding or directing participants in tasks. Participants did not mention emotional support behaviors as being helpful outside of the context of other support types. According to Mayhorn et al. (2004), older adults appreciated a positive learning experience. The findings from this study do not support older adults wanting a positive experience in an ICT instruction setting without the learning.

Although over half of the older adults in this study admitted experiencing one or two types of mild to moderate age-related physical decline, with one experiencing a severe visual disability, few of them stated that the disability was present during ICT instruction or that it directly impacted social support seeking. However, some stated that they would inform a future ICT instructor about the disability. Reticence to admit the difficulties that age-related physiological decline could cause is supported by Goldsmith (2004), who found that support seekers may not want to disclose a stigmatizing condition.

Therefore, the findings support the instrumental, informational, and appraisal support aspects of House's (1981) Social Support Theory framework in the self-described experiences of older adults with ICT instruction. The findings did not support the emotional support aspect when isolated from other behaviors.

## **Implications for the Literature**

Findings from this study are aligned with previous research on older adults and ICT use (Carroll, 2001; Kanayama, 2003; Karahasanović et al., 2009; Land, 2012; Ryu et al., 2009; Wicks, 2004) in that older adults used ICTs for communication and searching for special interests. Findings are also congruent with the findings that older adults were using ICTs to search for health information, to research side effects of medications, and to take a more active part in their own healthcare (Campbell, 2009); Campbell & Wabb, 2003; Leung et al., 2007). With some people hesitant to divulge personal and financial information online, fewer used ICTs for online shopping, banking, and auctions (Blit-Cohen & Litwin, 2004; Hilt & Lipschultz, 2004; Vuori & Holmlund-Rytkönen, 2005).

Although many computer nonusers at Seniorland were reluctant to participate in the study, a few of the participants were computer nonusers, stating no interest (Sarah) or perceived inability to use due to severe visual disability and advanced age (Annette). Other nonusers (Gloria, Edna, and Sylvia) had exposure to computers and desired to learn. This is partially congruent with Millward (2003), who found that older adults felt it was less stigmatizing to have no interest than to admit lack of knowledge. Millward's study was performed at a senior services agency via short survey. Also, some participants who had used computers at work did not use a computer at home (Betty, Peggy). This supports the work of Selwyn (2004), who found that some older adults who had been forced to use computers at work felt ambivalent about using them after retirement. Future studies could be performed that could include nonusers to see if "no interest" is given less as a reason for nonuse because of the increasing ubiquitousness of ICTs and online information and communication.

Like Kelly and Hibner (2005) discovered, older adults fared better in instruction sessions that considered their needs for controlling the pace of instruction and consideration of physiological declines causing difficulties with using ICTs. However, their study did not consider class size when examining pace of instruction. The participants in the present study favored more control over instruction pace, which favors small group or individual instruction sessions.

The literature review in information access barriers due to age-related physiological decline indicates that as ICTs become more ubiquitous and more information is available primarily online, information professionals should be more aware of these barriers (Bonnici et al., 2009; Bonnici et al., 2012; Walling, 2004). The ELAC population, falling in the chasm between having no disability and having an ADA-covered disability, is of great concern because information seekers with these conditions do not receive special services, and therefore information professionals need to be aware of these barriers and how to overcome them with tools already available rather than specialized adaptive equipment (Bonnici & Maatta, 2010). This study was found to be congruent with Bonnici and Maatta (2010) as well as Goldsmith (2004) in that some of the participants said they would disclose a visual, hearing, or mobility difficulty to a future ICT instructor, but some would not know to do so, or may not feel comfortable doing so (Bill). Thus, ICT instructors need to learn to be aware of signs indicating that someone is having difficulty, rather than waiting to be told or having to ask.

As this study examines the types of social support sought from ICT instructors, it contributes to the literature on Social Support Theory in communication and information sciences by adding to the findings of Harrod (2008) and Linton (2009), who reported that older adults found support from other people through their learning to use computers. It was found

that older adults seek consider social support important and seek social support in the ICT instruction setting, which adds to the literature about using ICTs for social support seeking surrounding illnesses and stressful life events. Participants in this study stated that they felt better about themselves after learning to use the computer, and many wanted to further their learning. It was also found that ICT instruction was provided through both strong ties (family members) and weak ties (college classes, senior service agency classes, work environment, and other settings), with informational support provided in these settings, similar to the findings of Mellor et al. (2008), and Mori and Harada (2010).

Therefore, the findings align this study within the literature on older adults and ICT use, ICT instruction with older adults, and social support seeking. It contributes new knowledge about the impact of age-related physiological decline with considerations of ELAC conditions on ICT instruction methods.

### **Implications for Theory**

The implications of this study on Social Support Theory include the findings that House's (1981) framework of four types of social support (emotional, instrumental, informational, and appraisal) partially explain the phenomenon of support seeking in the setting of ICT instruction for older adults. House's (1981) framework of social support shaped the categorization of the behaviors of ICT instructors noted in the videos of the ICT instruction classes. All of the ICT instructor behaviors noted had been immediately categorized according to House's (1981) framework of social support, but some (e.g., reviewing last week's lesson, previewing next week's lesson) were possibly too broadly categorized into appraisal support and thus were miscategorized. Thus, an additional category of social support including reviewing and previewing could be added to form a new framework of Social Support Theory to apply to

instructional settings. This framework would include emotional/feedback, instrumental/demonstrative, informational, and review/preview. Other theoretical frameworks such as Andragogy (Henschke, 2011; Knowles, Holton, & Swanson, 2005) could be considered in order to complement Social Support Theory in examining the types of interactions that older adults find helpful. Also, Rogers' (1995) five factors that influence technology adoption rates (relative advantage, compatibility, complexity, trialability, and observability) could be considered to examine the impact of technological advances in ICTs on social support seeking during ICT instruction. As Linton (2009) found that personalities can affect older adults' ICT use, personality testing to determine personality types could be performed to investigate whether personality types affect social support seeking during ICT instruction.

### **Implications for Practice**

Based on the theoretical framework employed in this study and the participants' responses, the following recommendations are made for ICT instructors pertaining to social supportive interaction types valued and desired by older adults during ICT instruction. These recommendations are summarized as follows:

- Encourage students to ask questions.
- Step through tasks with students. Talk to students while performing the task.
- Tell students if they are performing a task correctly.
- Gently redirect students if they make a mistake.
- Resist the temptation to take control of a student's keyboard, mouse, or handheld device if the student needs help performing a task.
- Develop understanding of the difficulties that age-related declines in visual, auditory, and dexterity abilities may pose in ICT use.

The data indicated that informational and appraisal support was considered the most important when learning to use ICTs. In teaching older adults, an environment where questions are encouraged and answered is most helpful in alleviating anxiety surrounding learning a new skill. Also, verbal guidance to step through tasks is important, which includes talking through a process while performing it, as well as stepping through the task with individual students. Participants found it helpful to be informed if they were doing a task correctly, or if they were doing a task incorrectly and shown the correct way to perform the task. Participants did not find it helpful when ICT instructors took over and performed the task for them, because although it got the task done, they did not retain the steps in performing the task and would need to ask again how to perform the task. This is especially an issue in larger classes, when instructors and helpers are more prone to take over and perform the task for a student when a student falls behind the pace of the class and the class needs to move on to the next task. This can be mitigated by limiting the size of ICT instruction classes for older adults to only a few students.

Also, over half of the participants in this study admitted experiencing one or two types of mild to moderate age-related physical decline, with one experiencing a severe visual disability. There is an increasing population of older adults experiencing ELAC conditions, mild to moderate age-related visual, auditory, and dexterity/mobility disabilities, and this population is ineligible for special ADA-covered services. Therefore, information provision to this population, as well as instruction in the use of ICTs, is left to information professionals who may not have had preparation in awareness of these conditions and how to overcome the barriers they pose in accessing digital information. This includes developing insight into difficulties that ICT users may be experiencing without the user verbally disclosing a difficulty or without having to ask the user if help is needed. In-service programs and continuing education programs for

information professionals in meeting the needs of people with ELAC conditions would be helpful in educating them on the increasing need for insight into information access difficulties due to visual, auditory, or dexterity/mobility decline, as well as knowledge of readily available accessibility tools.

### **Implications for LIS Education**

Based on the findings from this study, the following recommendations are made for LIS educators preparing information professionals who will be called upon to either work directly with older adults or to design websites and other ICT interfaces that older adults may use. The increasing population of older adults experiencing ELAC conditions generates a need for LIS professionals coming out of Master of Library and Information Science (MLIS) programs to be prepared to meet the needs of this population. This includes awareness of difficulties posed by ELAC conditions and the steps to take to overcome these difficulties. LIS education should include exposing students to these difficulties through interactions with people experiencing these conditions. As well, students experience information access attempts themselves using elements that simulate these conditions. Bonnici and Maatta (2010) suggested employing a Mobile Experiential Sensory (MES) Learning Laboratory, containing elements that simulate mild to severe visual, auditory, and dexterity disabilities, to give students first-hand experience in temporarily having a disability that impedes information access. Students can then perform reflective writing activities and share their experiences to gain greater understanding of the information accessibility needs of people experiencing these conditions.

### **Implications for Human-Computer Interaction for ICT Design**

According to Wandke et al. (2012), older adults often experience problems with ICT interfaces because they have been trained to use mechanical machines, in which each button

performed one function. Therefore, rote memorization of functions that sufficed for learning these machines was not very effective with multipurpose ICTs, in which one button or key may perform many functions. Older adults also experienced problems when important functions were hidden in menus and home screens and desktop screens were cluttered with unnecessary icons. Participants in the present study also talked about the difficulties they experienced with understanding icons, finding programs, and performing functions. According to Hawthorn (2000), graphics should be placed for relevance and not decoration, to minimize distraction. Therefore, interface design for older adults could be optimized to be more intuitive, with easy-to-find icons and menus, and fewer of them on the screen. This would minimize the available options and reduce confusion. An easy-to-find searchable help function would also be useful, as well as easy-to-find built-in accessibility tools such as magnifiers, screen readers, and font enlargement tools, to mitigate difficulties with seeing what is on the screen. Also, Hawthorn (2000) suggested that to lessen the learning curve, new iterations of software should include backward compatibility for older versions.

### **Limitations of the Study**

The small sample in this study led to issues with internal validity. Therefore, it is not possible to deduce that the findings were completely trustworthy. Future studies with larger populations and improvements in study instruments, as noted below, will enhance internal validity. Also, although results from a small sample size cannot be immediately generalized to a wider population, findings generalized to a broader theory (like Social Support Theory) can increase the likelihood of generalization via discovery of patterns by which to test theory (Firestone, 1993). Thus, external validity in a qualitative study with a small sample size is not determined by statistical generalizability but rather by analytical generalizability, or

generalizability to the theory through which the study is examined and future studies can be examined (Yin, 1984). Analytical generalization was addressed in this study by relating findings to the research questions in terms of supporting or refuting the elements of Social Support Theory and suggesting the inclusion of other theories, such as Andragogy, to complement Social Support Theory in explaining ICT instruction in older adults. To enhance external validity, the study should be repeated with other populations, including a case study involving an ICT instruction setting, where all participants in the study have had a similar ICT instruction experience.

Several issues with reliability were encountered in the study. Participants were asked what their ICT instructor failed to do that could have been more helpful. Although responses to this revealed the social supportive interactions that the participants desired but did not get, the responses did not truly reveal the interactions that they actually would seek in a future class. Rather, the results from the card-sorting exercises provided more information about the interactions, as depicted on the cards, that they actually would seek. In future studies, to find out what interactions participants would actually seek, the participants should be asked, “What would you actually seek?” rather than “What did the instructor fail to do?”

When repeating this study, redesign of cards should take into account problems that participants faced with the cards due literacy issues and lack of clarity of cards. When participants did think-alouds during the card-sorting exercise, I was able to correct misreadings. However, it could not be determined if the participants who did not do think-alouds during the card-sorting exercises had problems reading the cards. Also, in this study, think-alouds were not actively encouraged and happened spontaneously. Think-alouds should be encouraged at the outset of future studies.

The cards were printed using a large-print font (50-point to 65-point Times New Roman) to mitigate reading problems caused by age-related visual acuity issues. However, possibly the use of a serif font on the cards (Times New Roman) caused “Comforting me” to be read out loud as “Confronting me” in a few cases. Participants also had difficulties understanding the terms “validating,” “patronizing,” “analogies,” and “acknowledging,” and inquired about the meaning of the terms. Also, as noted previously, appraisal support cards “Acknowledging my prior ICT experience (not starting at square one if we don’t need to)” and “Validating my prior experience (not patronizing me)” caused difficulties in interpretation if participants focused on the phrase after the “not” in parentheses, causing the cards to be interpreted as meaning the opposite of their intended meanings. For example, one participant’s think-alouds included, “‘Acknowledging my prior ICT experience, not starting at square one if we don’t need to’ – not starting at square one – I don’t ever want that,” and, “‘Validating my prior experience, not patronizing me.’ I don’t want that.” Another participant’s think-alouds included, “‘Validating my prior experience, and not patronizing me’ – that didn’t happen. He didn’t do that. So, I’m going to say a little important, or not important at all.” These cards, as well as those with vocabulary issues, should be simplified. As well, “Providing me with equipment to use” should be clarified to state, “Providing me with equipment to use during instruction session” or “Having computers available to use in the class” to mitigate misinterpretation that the equipment would be given to them to keep. These issues with the cards were not noted on the pilot study because the pilot testers did not think-aloud during the card-sorting exercises, nor were they encouraged to think-aloud. Increasing clarity of questions in future studies will enhance reliability of the study instruments.

Another issue involved the cards being out of context of the videos from which they were derived. Participants were reading either broad behavioral categories (e.g., “Acknowledging ...”

or “Validating ...”) or specific behaviors (e.g., “Gently touching me on the shoulder”) out of the context in which they happened in the ICT instruction setting in the videos. This would leave interpretation of the cards up to the participants, who could interpret the behaviors differently. To mitigate this, cards could either all contain specific behaviors, or the card-sorting exercise could be supplemented by showing participants short video segments depicting the behaviors that are on the cards.

House’s (1981) four categories of social support shaped the development of the cards. Although all interactions between students and ICT instructors seen in the videos were noted, they were strictly categorized into House’s framework. Therefore, some interactions were broadly categorized when they probably fell outside of House’s framework. For example, reviewing past material and previewing upcoming lessons were broadly categorized into “Acknowledging ...” and “Validating ...” under appraisal support, but were actually not appraisal support/feedback. Rather, an additional category of social support including preview/review is more appropriate.

### **Emerging Themes and Future Research**

In telling their stories, statements that participants made were categorized into several emerging themes. These included ICT instruction settings, from which emerged Bernard’s story of learning from fellow inmates in a computer lab in prison. Emotions during ICT instruction included participants who said they were scared or nervous (e.g., Betty and Peggy) versus those who were excited or fascinated (e.g., George and Sophia). Emotions could be related to instructional settings. Those who learn in a work setting could be more scared or nervous because of the fear of deleting important data or not doing well at their jobs. Those who were excited or fascinated may have been learning for their own enrichment and did not have the

pressure of work performance. This bears further study. Helpful and unhelpful ICT instructor behavior reported contained some of the same language that appeared in the card-sorting exercises, such as step-by-step instructions, and ICT instructors who were understanding of their situations, and the card-sorting exercises corroborated the interview data. Other terms emerging from the interviews that did not appear on the cards could be used in future studies. These include patience, practice time, slow pace of instruction, and class size. When asked about disability disclosure to ICT instructors, most of the participants who disclosed a disability to me stated that they did not have a disability during ICT instruction, especially those who had many years of ICT experience. However, most of them stated they would disclose a disability to a future ICT instructor if they were to take a class. Most also stated that they knew how to use the built-in accessibility tools on their ICT devices, but those who did not know stated that they were interested in learning. Therefore, ICT instructor awareness of accessibility tools and ELAC issues is paramount in teaching this population. Currently, I am in the process of studying ICT instructors' awareness of ELAC issues as they work with older adults. Implications exist for future research in theory and practice for ICT accessibility awareness for information professionals involved in all aspects of providing ICT instruction to older adults.

### **Conclusion**

In summary, the research showed that older adults value instrumental, informational, and appraisals support in an ICT instruction setting. The problem that this research addressed was the gap existing in the literature around self-description of social support seeking of older adults learning to use ICTs. This study has shown that instrumental, informational, and appraisal support are considered most important in an instructional setting, and that considering social

support as one element of a complex system of interaction during the instruction process will inform those who work with older adults in facilitating the learning process.

## REFERENCES

- AARP (2013). *Personal technology*. Retrieved from <http://www.aarp.org/home-family/personal-technology/>
- Adelman, M. B., Parks, M.R., & Albrecht, T.L. (1987). Beyond close relationships: strength in weak ties. In T. L. Albrecht, M. B. Adelman, and Associates (Eds.), *Communicating social support* (pp. 126-147). Newbury Park, CA: Sage.
- Albrecht, T. L. & Adelman, M. B. (1987). Communicating social support: a theoretical perspective. In T. L. Albrecht, M. B. Adelman, and Associates (Eds.), *Communicating social support* (pp. 18-39). Newbury Park, CA: Sage.
- Alpay, L. L., Touissant, P. J., Ezendam, N. P. M., Rövekamp, T. A. J. M., Graafmans, W. C., & Westendorp, R. G. J. (2004). Easing Internet access of health information for elderly users. *Health Informatics Journal*, 10(3), 185-194.
- Angell, K (2009). Boom or bust: the need for senior services librarians. *Progressive Librarian*, 32, 29-35.
- Asla, T., Williamson, K., & Mills, J. (2006). The role of information in successful aging: the case for a research focus on the oldest old. *Library & Information Science Research*, 28(1), 49-63.
- Babbie, E. (1989). *The practice of social research* (5th ed.). Belmont, CA: Wadsworth Thomson Learning.
- Babbie, E. (2004). *The practice of social research* (10th ed.). Belmont, CA: Wadsworth Thomson Learning.
- Balas, J. (1989). SeniorNet: computer skills for senior citizens. *Computers in Libraries*, 9(8), 24-26.
- Barnes, J.A. (1954). Class and committees in a Norwegian island parish. *Human Relations*, 7(1), 39-58.
- Barnfather, A., Stewart, M., Magill-Evans, J., Ray, L., & Letourneau, N. (2011). Computer-mediated support for adolescents with cerebral palsy or spina bifida. *CIN: Computers, Informatics, Nursing*, 29(1), 24-33.
- Barrera, M. (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology*, 14(4), 413-445.

- Barron, I. G., & Topping, K. J. (2011). Sexual abuse prevention programme fidelity: video analysis of interactions. *Child Abuse Review, 20*, 134-151.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529.
- Bean, C. (2003). Meeting the challenge: training an aging population to use computers. *The Southeastern Librarian, 51*(3), 16-25.
- Bean, C., & Laven, M. (2003). Adapting to seniors: computer training for older adults. *Florida Libraries, 46*(2), 5-7.
- Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: different susceptibility to environmental influences. *Psychological Bulletin, 135*(6), 885-908.
- Benkel, I., Wijk, H., & Molander, U. (2009). Managing grief and relationship roles influence which forms of social support the bereaved needs. *American Journal of Hospice & Palliative Medicine, 26*(4), 241-245.
- Bernard, H. R. (2013). *Social research methods: qualitative and quantitative approaches* (2nd ed.). Los Angeles: Sage.
- Blit-Cohen, E., & Litwin, H. (2004). Elder participation in cyberspace: a qualitative analysis of Israeli retirees. *Journal of Aging Studies, 18*(4), 385-398.
- Bonnici, L. J., & Matta, S. L. (2010). *Accessible Libraries for All* [Grant GR23221 proposal to the Institute of Museum and Library Services].
- Bonnici, L. J., Maatta, S. L., & Wells, M. K. (2009). US national accessibility survey: librarians serving patrons with disabilities. *New Library World, 110*(11/12), 512-528.
- Bonnici, L. J., Maatta, S. L., Wells, M. K., Brodsky, J., & Meadows, C. W., III. (2012). Physiological access as a social justice type in LIS curricula. *Journal of Education for Library and Information Science, 53*(2), 115-129.
- Bornstein, M. H., Putnick, D. L., Suwalsky, J. T. D., & Gini, M. (2006). Maternal chronological age, prenatal and perinatal history, social support, and parenting of infants. *Child Development, 77*(4), 875-892.
- Boutin-Foster, C. (2005). In spite of good intentions: patients' perspectives on problematic social support interactions. *Health and Quality of Life Outcomes, 3*, 52. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1236950/>

- Braithwaite, D. O., Waldron, V. R., & Finn, J. (1999). Communication of social support in computer-mediated groups for people with disabilities. *Health Communication, 11*(2), 123-151.
- Bradley, N., & Poppen, W. (2003). Assistive technology, computers and Internet may decrease sense of isolation for homebound elderly and disabled persons. *Technology and Disability, 15*, 19-25.
- Brynko, B. (2008). Westchester library system rolls out Medicare mashup. *Information Today, 25*(4), 19.
- Bundy, A. (2005). Community critical: Australian public libraries serving seniors. *Australasian Public Libraries and Information Services, 18*(4), 158-69.
- Burwell, L. A. (2001). Too old to surf? No way! An Internet course for seniors [at the Woodson Regional Library of Chicago Public]. *American Libraries, 32*(10), 40-42.
- Butcher, W., & Street, P. - A. (2009). Lifelong learning with older adults. *Australasian Public Libraries and Information Services, 22*(2), 64-70.
- Campbell, R. J. (2009). Internet-based health information seeking among low-income, minority seniors living in urban residential centers. *Home Health Care Management & Practice, 21*(3), 195-202.
- Campbell, R. J., & Wabb., J. (2003). The elderly and the Internet: a case study. *Internet Journal of Health, 3*(1), 2-17.
- Campbell, S. W., & Kelley, M. J. (2008). Mobile phone use among Alcoholics Anonymous members: new sites for recovery. *New Media & Society, 10*(6), 915-933.
- Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior, 56*, 249-276.
- Carroll, J. M. (2001). Community computing as human-computer interaction. *Behaviour & Information Technology, 20*(5), 307-314.
- Casey, D., & Murphy, K. (2009). Issues in using methodological triangulation in research. *Nurse Researcher, 16*(4), 40-55.
- Cassel, J. (1973). The relation of the urban environment to health: implications for prevention. *Mount Sinai Journal of Medicine, New York, George James Memorial Issue, 40*, 539-550.

- Cassel, J. (1976). The contribution of the social environment to host resistance. *American Journal of Epidemiology*, 104, 107-123.
- Centers for Disease Control and Prevention. (2007). Prevalence of stroke – United States, 2005. *Morbidity and Mortality Weekly Report (MMWR)*, 56(19), 469-474. Retrieved from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5619a2.htm>
- Centers for Disease Control and Prevention (2010). Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation – United States, 2007-2009. *Morbidity and Mortality Weekly Report (MMWR)*, 59 (39). 1261-1265. Retrieved from: [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5939a1.htm?s\\_cid=mm5939a1](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5939a1.htm?s_cid=mm5939a1)
- Charness, N., & Boot, W. R. (2009). Aging and information technology use: potentials and barriers. *Current Directions in Psychological Science*, 18(5), 253-258.
- Chatman, E. A. (1991). Channels to a larger social world: older women staying in contact with the great society. *Library and Information Science Research*, 13, 281-300.
- Chu, A., Huber, J., Mastel-Smith, B., & Cesario, S. (2009.) Seniors for better health: computer use and Internet health information retrieval among older adults in a low socioeconomic community. *Journal of the Medical Library Association*, 97(1), 12–20.
- Cobb, S. (1976). Social support as moderator of life stress. *Psychosomatic Medicine*, 38, 300-314.
- Cohen, A. M. (2010). Wiring the elderly. *The Futurist*, 44(2), 7-8.
- Cohen, S., & McKay, G. (1984). Social support, stress and the buffering hypothesis: a theoretical analysis. In A. Baum, S. E. Taylor, & J. E. Singer (Eds.), *Handbook of psychology and health* (pp. 253-267). Hillsdale, NJ: Lawrence Erlbaum.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310-357.
- Comaroff, J., & Maguire, P. (1981). Ambiguity and the search of meaning: childhood leukemia in the modern clinical context. *Social Science and Medicine*, 15B, 115-123.
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: development of a measure and initial test. *MIS Quarterly*, 19(2), 189-211.
- Copeland, W. D., & Decker, D. L. (1996). Video cases and the development of meaning making in preservice teachers. *Teaching and Teacher Education*, 12(5), 467-481.

- Cottle, C. (2008). Cornucopia of services for seniors: WCFAAA and public libraries form partnership to benefit seniors. *Florida Libraries*, 51(2), 16-17.
- Creswell, J. W. (2007). *Qualitative inquiry & research design* (2nd ed.). Thousand Oaks, CA: Sage.
- Crouch, M., & McKenzie, H. (2006). The logic of small samples in interview-based qualitative research. *Social Science Information*, 45(4), 483-499.
- Cutrona, C. E. (1984). Social support and stress in transition to parenthood. *Journal of Abnormal Psychology*, 93, 378-390.
- Cutrona, C.E., & Russell, D. (1990). Type of social support and specific stress: toward a theory of optimal matching. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Social support: an interactive view* (pp. 319-366). New York: Wiley.
- Cutrona, C.E., & Suhr, J. A. (1994). Social support communication in the context of Marriage: An analysis of couples' supportive interactions. In B. R. Burleson, T. L. Albrecht, & I. G. Sarason (Eds.), *Communication of social support* (pp. 113-135). Thousand Oaks, CA: Sage.
- Davison, K. P., Pennebaker, J. W., & Dickerson, S. S. (2000). Who talks? The social psychology of illness support groups. *American Psychologist*, 55(5), 205-217.
- DeAndrea, D. C., Ellison, N. B., LaRose, R., Steinfield, C., & Fiore, A. (2012). Serious social media: on the use of social media for improving students' adjustment to college. *Internet & Higher Education*, 15(1), 15-23.
- Denzin, N. (1989). *The research act: a theoretical introduction to sociological methods* (3rd ed.). New York: Prentice Hall.
- Derlega, V. J., & Chaikin, A. L. (1977). Privacy and self-disclosure in social relationships. *Journal of Social Issues*, 33, 102-115.
- Dervin, B. (1976). Strategies for dealing with human information needs: information or communication? *Journal of Broadcasting*, 20, 324-333
- Doody, O., & Noonan, M. (2013). Preparing and collecting interviews to collect data. *Nurse Researcher*, 20(5), 28-32.
- Dunn, D. S. (2009). *Research methods for social psychology*. West Sussex, UK: Wiley-Blackwell.
- Durkheim, E. (1897/1951). *Suicide*. New York: Free Press.

- Eaton, J., & Salari, S. (2005). Environments for lifelong learning in senior centers. *Educational Gerontology, 31*(6), 461-480.
- Eggert, L. L. (1987). Support in family ties: stress, coping, and adaptation. In T. L. Albrecht, M. B. Adelman, and Associates (Eds.), *Communicating social support* (pp. 80-104). Newbury Park, CA: Sage.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends”: social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143-1168.
- Field, J. (2006). *Lifelong learning and the new educational order*. London, UK: Trentham Books.
- Firestone, W. A. (1993). Alternative arguments for generalizing from data as applied to qualitative research. *Educational Researcher, 22*(4), 16-23.
- Freimuth, V. S. (1987). The diffusion of supportive information. In T. L. Albrecht, M. B. Adelman, and Associates (Eds.), *Communicating social support* (pp. 212-237). Newbury Park, CA: Sage.
- Froland, C., Pancoast, D. L., Chapman, N. J., & Kimboko, P. J. (1981). *Helping networks and human services*. Newbury Park, CA: Sage.
- Given, L. M., Ruecker, S., Simpson, H., Sadler, E., & Ruskin, A. (2007). Inclusive interface design for seniors: image-browsing for a health information context. *Journal of the American Society for Information Science and Technology, 58*(11), 1610-17.
- Glendenning, F. (1995). Education for older adults: lifelong learning, empowerment, and social change. In J. F. Nussbaum & J. Coupland (Eds.), *Handbook of communication and aging research* (pp. 467-490). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Goldsmith, D. J. (2004). *Communicating social support*. New York, NY: Cambridge University Press.
- Gottlieb, B. H. (1978). The development and application of a classification scheme of informal helping behaviors. *Canadian Journal of Behavioral Science, 10*(2), 105-115.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*, 1360-1380.
- Granovetter, M. S. (1982). The strength of weak ties: a network theory revisited. In P. V. Marsden & N. Lin (Eds.), *Social structure and network analysis* (pp. 105-130). Beverly Hills: Sage.

- Greenberg, M. S. (1980). A theory of indebtedness. In K. J. Gergen, M. S. Greenberg, & R. H. Willis (Eds.), *Social exchange: advances in theory and research* (pp. 3-26). New York: Plenum.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, *10*(1), 76-88.
- Guidelines for library and information services to older adults. (2008). *Reference & User Services Quarterly*, *48*(2), 209-212.
- Gustafson, D. H., McTavish, F. M., Stengle, W., Ballard, D., Hawkins, R., Shaw, B. R., ... Landucci, G. (2005). Use and impact of eHealth system by low-income women with breast cancer. *Journal of Health Communication*, *10*, 195-218.
- Hakmiller, K. (1966). Need for self-evaluation, perceived similarity and comparison choice. *Journal of Experimental Psychology, Suppl. 1*, 49-54.
- Hallett, J. W., Jr. (2008). Peripheral arterial disease. *Merck manuals online medical library*. Retrieved from: [http://www.merckmanuals.com/professional/sec07/ch085/ch085e.html?qt=occlusive peripheral arterial disease&alt=sh](http://www.merckmanuals.com/professional/sec07/ch085/ch085e.html?qt=occlusive%20peripheral%20arterial%20disease&alt=sh)
- Halter, C. P. (2006). *The reflective lens: the effects of video analysis on preservice teacher development*. Doctoral dissertation, University of California, San Diego.
- Harrod, M. (2008). *No senior left behind: creating older adult computer users* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3303518)
- Hawthorn, D. (2000). Possible implications of aging for interface designers. *Interacting with Computers*, *12*(5), 507-528.
- Haythornthwaite, C. (1996). Social network analysis: an approach and technique for the study of information exchange. *Library and Information Science Research*, *18*(4), 323-342.
- Haythornthwaite, C. (2005). Social networks and Internet connectivity effects. *Information, Communication, & Society*, *8*(2), 125-147.
- Haythornthwaite, C., & Wellman, B. (1998). Work, friendship and media use for information exchange in a networked organization. *Journal of the American Society for Information Science*, *49*(12), 1101-1114.
- Haythornthwaite, C., Wellman, B., & Mantei, M. (1995). Work relationships and Media use: A social network analysis. *Group Decisions and Negotiations*, *4*(3), 193-211.

- Heisel, M. J., Conwell, Y., Pisani, A. R., & Duberstein, P. R. (2011). Concordance of self- and proxy-reported suicide ideation in depressed adults 50 years of age or older. *Canadian Journal of Psychiatry, 56*(4), 219-226.
- Henschke, J. A. (2011). Considerations regarding the future of andragogy. *Adult Learning 22*(1), 34-37.
- Hepburn, P., & Lewis, K. M. (2008). What's in a name? Using card sorting to Evaluate branding in an academic library's Web site. *College & Research Libraries, 69*(3), 242-250.
- Hickman, J. M., Rogers, W. A., & Fisk, A. D. (2007). Training older adults to use new technology. *The Journals of Gerontology, 62B*(Supp. 1), 77-84.
- Hilt, M. L., & Lipschultz, J. H. (2004). Elderly Americans and the Internet: e-mail, TV news, information and entertainment websites. *Educational Gerontology 30*, (1), 57-72.
- Hilt, M. L., & Lipschultz, J. H. (2006). AARP online portrayal of Social Security: engaging baby boomers through interaction. *Educational Gerontology, 32*(6), 393-407.
- Holahan, C. J. (1983). Interventions to reduce environmental stress: enhancing social support and personal control. In E. Seidman (Ed.), *Handbook of social intervention* (pp. 542-560). Newbury Park, CA: Sage.
- Holland, J. L., & Christian, L. M. (2009). The influence of topic interest and interactive probing on responses to open-ended questions in web surveys. *Social Science Computer Review, 27*(2), 196-212.
- House, J. S. (1981). *Work stress and social support*. Reading, Massachusetts: Addison-Wesley.
- Igwe, C. F. (2008). *Beyond the digital divide into computer-mediated communications: a content analysis of the role of community weblogs in building Oldenburg's virtual third places in Black America* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3325926)
- Johnson, J. D. (2009). An impressionistic mapping of information behavior with special attention to contexts, rationality, and ignorance. *Information Processing and Management, 45*, 593-604.
- Johnson, J. V., & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: a cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health, 78*(10), 1336-1342.

- Kaklamanou, D., Armitage, C. J., & Jones, C. R. (2013). A further look into compensatory health beliefs: a think aloud study. *British Journal of Health Psychology, 18*, 139-154.
- Kanayama, T. (2003). Ethnographic research on the experience of Japanese elderly people online. *New Media & Society, 5*(2), 267-288.
- Karahasanović, A., Brandtzæg, P. B., Heim, J., Lüders, M., Vermeir, L., Pierson, J., ... Jans, G. (2009). Co-creation and user-generated content – elderly people's user requirements. *Computers in Human Behavior, 25*(3), 655-678.
- Kelly, J. G. (1964). The mental health agent in the urban community. In *Urban America and the planning of mental health services* (pp. 474-489). New York: Group for the Advancement of Psychiatry.
- Kelly, M., & Hibner, H. (2005). Teaching computers to seniors: what not to do. *Public Libraries, 44*(3), 151-155.
- Kerico, J. (2006). Westminster Village: A theme-based approach to teaching seniors about the Internet. *Indiana Libraries, 25*(3), 9-12.
- King, D. H. M. (2008, December). *Our changing users: the aging of the population*. Retrieved from: <http://ascla.ala.org/interface/2008/12/our-changing-users-the-aging-of-the-population/>
- Kleiman, A. M. (1995). The aging agenda: redefining library services for a graying population. *Library Journal (1976), 120*, 32-4.
- Knoblauch, H., Schnettler, B., & Raab, J. (2006). Video-analysis: methodological aspects of interpretive audiovisual analysis in social research. In H. Knoblauch, B. Schnettler, J. Raab, & H. - G. Soeffner (Eds.), *Video analysis: methodology and methods* (pp. 9-26). Frankfurt am Main: Peter Lang.
- Knowles, M., Holton, E. F., III, & Swanson, R. A. (2005). *The adult learner: the definitive classic in adult education and human resource development* (6th ed.). Burlington, MA: Elsevier.
- Koeske, G. F., & Koeske, R. D. (1989). Work load and burnout: Can social support and perceived accomplishment help? *Social Work, 34*(3), 243-248.
- Krause, N. (1986). Social support, stress, and well-being among older adults. *Journal of Gerontology, 41*(4), 512-519.
- Krosnick, J. A. (1999). Survey research. *Annual Review of Psychology, 50*, 537-567.

- Kull-Poutanen, M. (2009). Digital skills for everyone. *Scandinavian Public Library Quarterly*, 42(3), 4-5.
- Lakey, B., & Cohen, S. (2000). Social support theory and measurement. In S. Cohen, L. Underwood, & B. Gottlieb (Eds.), *Measuring and intervening in social support* (pp. 29-52). New York: Oxford University Press.
- Land, J. K. M. (2012). *From gravestones to Google: The impact of Internet adoption on genealogists' information and communication behaviors* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3511037)
- Langford, C. P. H., Bowsher, J., Maloney, J. P., & Lillis, P. P. (1997). Social support: a conceptual analysis. *Journal of Advanced Nursing*, 25(1), 95-100.
- Laurich, R. (2002). The platinum web: sites dedicated to senior citizens on the Internet. *Collection Building*, 21(4), 174-82.
- Leung, A., Ko, P., Chan, K. S., Chi, I., & Chow, N. (2007). Searching health information via the Web: Hong Kong Chinese older adults' experience. *Public Health Nursing*, 24(2), 169-175.
- Lin, C. I. C., Tang, W.-h., & Kuo, F. – Y. (2012). “Mommy wants to learn the computer”: How middle-aged and elderly women in Taiwan learn ICT through social support. *Adult Education Quarterly*, 62(1), 73-90.
- Lin, N., Woelfel, M., & Light, S. C. (1986). Buffering the impact of the most important life event. In N. Lin, A. Dean, & W. Ensel (Eds.), *Social support, life events, and depression* (pp. 307-332). Orlando, FL: Academic Press.
- Linton, N. J. (2009). *Connecting: the use of information and communication technologies by older adults in a retirement community* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3406779)
- Litwak, E., & Szelenyi, I. (1969). Primary group structures and their functions: Kin, neighbors and friends. *American Sociological Review*, 34, 465-481.
- Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: a review. *Journal of Mental Health*, 11(3), 255-265.
- Lyngstad, T. H., & Jalovaara, M. (2010). A review of the antecedents of union dissolution. *Demographic Research*, 23(10), 257-292.
- Machrone, B. (2001). Grandma's PC, revisited. *PC Magazine*, 20(7), 79.

- Marquié, J. C., Jourdan-Boddaert, L., & Huet, N. (2002). Do older adults underestimate their actual computer knowledge? *Behaviour & Information Technology*, 21(4), 273-280.
- Mayan, M. J. (2009). *Essentials of qualitative inquiry*. Walnut Creek, CA: Left Coast Press.
- Mayhorn, C. B., Stronge, A., McLaughlin, A., & Rogers, W. (2004). Older adults, computer training and the systems approach: a formula for success. *Educational Gerontology*, 30(3), 185-203.
- McEwen, R. N. (2010). *A world more intimate: exploring the role of mobile phones in maintaining and extending social networks* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number NR73152)
- McIntosh, J. (1974). Processes of communication, information seeking and control associated with cancer: a selective review of the literature. *Social Science and Medicine*, 8, 167-187.
- Mellor, D., Firth, L., & Moore, K. (2008). Can the Internet improve the well-being of the elderly? *Ageing International*, 32(1), 25-42.
- Mercer, R. T. (1985). The process of maternal role attainment over the first year. *Nursing Research*, 34(4), 198-204.
- Mettee, D. R., & Smith, G. (1977). Social comparison and interpersonal attraction: the case for dissimilarity. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 69-101). New York: John Wiley.
- Milgram, S. (1977). *The individual in a social world*. Reading, MA: Addison-Wesley.
- Millward, P. (2003). The "gray digital divide": perception, exclusion, and barriers of access to the Internet for older people. *First Monday*, 8(7). Retrieved from: <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1066/986>
- Mori, K., & Harada, E. T. (2010). Is learning a family matter?: Experimental study of the influence of social environment on learning by older adults in the use of mobile phones. *Japanese Psychological Research*, 52(3), 244-255.
- Morris, A., Goodman, J., & Brading, H. (2007). Internet use and non-use: views of older users. *Universal Access in the Information Society*, 6(1), 43-57.
- Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks: Sage.

- Mvungi, S. H., de Jager, K., & Underwood, P. G. (2008). An evaluation of the information architecture of the UCT Library Web site. *South African Journal of Libraries & Information Science*, 74(2), 171-182.
- National Institute on Deafness and other Communication Disorders (NIDCD) (2010). *Quick statistics*. Retrieved from: <http://www.nidcd.nih.gov/health/statistics/quick.htm>
- Nuckolls, K., B., Cassel, J., & Kaplan, B. H. (1972). Psychosocial assets, life crisis and the prognosis of pregnancy. *American Journal of Epidemiology*, 95, 431-441.
- Nycyk, M., & Redsell, M. (2006). The role of computer tuition in community health: a grounded theory approach. *Ageing International*, 31(4), 296-308.
- Oh, S. (2010). *Answerers' motivations and strategies for providing information and social support in social Q&A: an investigation of health question answering* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3428391)
- Parks, M. R. (1982). Ideology in interpersonal communication: off the couch and into the world. In M. Burgoon (Ed.), *Communication yearbook 5* (pp. 79-107). New Brunswick, NJ: Transaction Books.
- Phang, C.W., Sutanto, J., Kankanhalli, A., Li, Y., Tan, B. C. Y., & Teo, H. H. (2006). Senior citizens' acceptance of information systems: a study in the context of e-government services. *IEEE Transactions on Engineering Management*, 53(4), 555-569.
- Rains, S. A., & Keating, D. M. (2011). The social dimension of blogging about health: health blogging, social support, and well-being. *Communication Monographs*, 78(4), 511-534.
- Rands, M. (1981). *Social networks before and after marital separation: a study of recently divorced persons* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 8101386)
- Range, L. M., Walston, A. S., & Pollard, P. M. (1992). Helpful and unhelpful comments after suicide, homicide, accident, or natural death. *Omega*, 25(1), 25-31.
- Ray, E. B. (1987). Supportive relationships and occupational stress in the workplace. In T. L. Albrecht, M. B. Adelman, and Associates (Eds.), *Communicating social support* (pp. 172-191). Newbury Park, CA: Sage.
- Ray, W. J. (1997). *Methods toward a science of behavior and experience* (5th ed.). Pacific Grove, CA: Brooks/Cole Publishing Company.

- Robinson, J. D., & Tian, Y. (2009). Cancer patients and the provision of informational social support. *Health Communication, 24*(5), 381-390.
- Robinson, J. D., Turner, J. W., Levine, B., & Tian, Y. (2011). Expanding the walls of the health care encounter: support and outcomes for patients online. *Health Communication, 26*(2), 125-134.
- Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.
- Russ, K. (2004). FirstGov for seniors. *Arkansas Libraries, 61*(4), 26-27.
- Ryu, M. H., Kim, S., & Lee, E. (2009). Understanding the factors affecting online elderly user's participation in video UCC services. *Computers in Human Behavior, 25*(3), 619-632.
- Saari, A. (2009). Seniors online. *Scandinavian Public Library, 42*(3), 25.
- Sadler, G. R.; Lee, H. - C., Lim, R. S. - H., & Fullerton, J. (2010). Recruitment of hard-to-reach population subgroups via adaptations of the snowball sampling strategy. *Nursing and Health Sciences, 12*, 369-374.
- Sarason, I. G., & Sarason, B. R. (2009). Social support: mapping the construct. *Journal of Social and Personal Relationships, 26*(1), 113-120.
- Saumure, K. (2010). *Motivation and the information behaviours of online learning students: the case of a professionally-oriented, graduate program* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number N462485)
- Schull, D. D. (2005). A new look at lifelong access. *American Libraries, 36*(8), 42-44.
- Schutt, R. K. (2006). *Investigating the social world: the process and practice of research* (5th ed.). Thousand Oaks, CA: Sage.
- Sekaran, U. (2003). *Research methods for business: a skill building approach*. Hoboken, NJ: John Wiley & Sons, Inc.
- Selwyn, N. (2004). The information aged: a qualitative study of older adults' use of information and communications technology. *Journal of Aging Studies, 18*, 369-384.
- Shapira, N., Barak, A., & Gal, I. (2007). Promoting older adults' well-being through Internet training and use. *Aging & Mental Health, 11*(5), 477-484.
- Sherer, M. (1997). Introducing computers to frail residents of homes for the aged. *Educational Gerontology, 23*(4), 345-358.

- Shoemaker, S. (2003). Acquisition of computer skills by older users: a mixed methods study. *Research Strategies, 19*(3/4), 165-80.
- Silverman, D. (2005). Instances or sequences: improving the state of the art of qualitative research. *Forum: Qualitative Social Research, 6*(3), Art. 30. Retrieved from: <http://www.qualitative-research.net/fqs-texte/3-05/05-3-30-e.htm>
- Sloan, M. (2009). Developing a good practice guide on library services for older people. *Australasian Public Libraries and Information Services, 22*(2), 48-57.
- Smith, D. K., Moores, T., & Chang, J. (2005). Prepare your mind for learning. *Communications of the ACM, 48*(9), 115-118.
- Smith, N. J. (1986). Humanizing the computer for the older adult. *Ohio Library Association Bulletin, 56*, 25-26.
- Smith, R., Knight, D., & Joines, D. (2005). Improving the health of seniors: a partnership between a public library and an academic health sciences library. *Virginia Libraries, 51*(4), 25-6.
- St. Jean, B. (2014). Devising and implementing a card-sorting technique for a longitudinal investigation of the information behavior of people with type 2 diabetes. *Library & Information Science Research, 36*(1), 16-26.
- St. Jean, B. L. (2012). *Information behavior of people diagnosed with a chronic serious health condition: a longitudinal study* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3519728)
- Stutzman, F. D. (2011). *Networked information behavior in life transition* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3456300)
- Subramaniam, M., St. Jean, B., Taylor, N. G., Follman, R., & Casciotti, D. (2014). Tweens HackHealth: Working with school librarians to engage disadvantaged youth in health entrepreneurship. Paper presented at the Association for Library and Information Science Education (ALISE) Conference, Philadelphia, Pennsylvania.
- Sutton, R. (2009). Supporting the ageing population. *Australian Library Journal, 58*(4), 377-385.
- Taylor, S. E. (1982). Social cognition and health. *Personality and Social Psychology, Bulletin 8*, 549-562.
- Theorell, T., & Karasek, R. A. (1996). Current issues relating to psychosocial job strain and cardiovascular disease research. *Journal of Occupational Health, Psychology 1*(1), 9-26.

- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 5(2), 145-161.
- Trochim, W. M. K. (2006a). *Research methods knowledge base: construct validity*. Retrieved from: <http://www.socialresearchmethods.net/kb/constval.php>
- Trochim, W. M. K. (2006b). *Research methods knowledge base: qualitative validity*. Retrieved from: <http://www.socialresearchmethods.net/kb/qualval.php>
- Tuten, T. L. (2009a). Case studies and field observations. In S. Zhou & W. D. Sloan (Eds.), *Research methods in communication* (pp. 265-271). Northport, AL: Vision Press.
- Tuten, T. L. (2009b). Focus groups and intensive interviews. In S. Zhou & W. D. Sloan (Eds.), *Research methods in communication* (pp. 289-304). Northport, AL: Vision Press.
- Unger, D. G., & Wandersman, A. (1985). The importance of neighbors: the social, cognitive, and affective components of neighboring. *American Journal of Community Psychology*, 13, 139-169.
- Van Elteren, M. (1992). Kurt Lewin as filmmaker and methodologist. *Canadian Psychology*, 33(3), 599-608.
- Van Fleet, C., & Antell, K. E. (2002). Creating cyberseniors: older adult learning and its implications for computer training. *Public Libraries*, 41(3), 149-155.
- Van Gerven, P. W. M., Paas, F., & Tabbers, H. K. (2006). Cognitive aging and computer-based instructional design: where do we go from here? *Educational Psychology Review*, 18(2), 141-157.
- Veinot, T. C. E. (2009). *Social capital and HIV/AIDS information/help exchange networks in rural Canada* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number NR50465)
- Vuori, S., & Holmlund-Rytkönen, M. (2005). 55+ people as Internet users. *Marketing Intelligence & Planning*, 23(1), 58-76.
- Wagner, N., Hassanein, K., & Head, M. (2010). Computer use by older adults: a multi-disciplinary review. *Computers in Human Behavior*, 26, 870-882.
- Waitzkin, H. (1985). Information giving in medical care. *Journal of Health and Social Behavior*, 26, 81-101.

- Walker, J., Wasserman, S., & Wellman, B. (1994). Statistical models for social support Networks. In S. Wasserman & J. Galaskiewicz (Eds.), *Advances in social network analysis* (pp. 53-78). Thousand Oaks, CA: Sage.
- Walling, L. L. (2004). Educating students to serve information seekers with disabilities. *Journal of Education for Library and Information Science, 45*(2), 137-148.
- Wandke, H., Sengpiel, M., & Sönksen, M. (2012). Myths about older people's use of information and communication technology. *Gerontology, 58*(6), 564-570.
- Webb, L. M. (2003). Availability of Internet training programs for elderly public library patrons. *The Reference Librarian, 37*(77), 141-151.
- Whipple, J. L., Lambert, M. J., Vermeersch, D. A., Smart, D. W., Nielsen, S. L., & Hawkins, E. J. (2003). Improving the effects of psychotherapy: the use of early identification of treatment failure and problem-solving strategies in routine practice. *Journal of Counseling Psychology, 50*(1), 59-68.
- Wicks, D. A. (2004). Older adults and their information seeking. *Behavior & Social Sciences Librarian, 22*(2), 1-26.
- Wills, T. A. (1983). Social comparison in coping and help-seeking. In B. M. DePaulo, A. Nadler, & J. D. Fisher (Eds.), *New directions in helping: Vol. 2. help-seeking* (pp. 109-141). New York: Academic Press.
- Winter, P. F. (2010). *The lived experience of social support for older adults in a computer-mediated environment: a phenomenological research study* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Full Text. (Accession Number 3443635)
- Winters, C. A. (2000). Promising practices in adult correctional education. *Journal of Correctional Education, 51*(4), 312-314.
- Xie, B. (2006). Perceptions of computer learning among older Americans and older Chinese. *First Monday, 11*(10), 1. Retrieved from: <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1408/1326>
- Yin, R. K. (1984). *Case study research*. Beverly Hills: Sage Publications, Inc.
- Yorston, L. C., Kolt, G. S., & Rosenkranz, R. R. (2012). Physical activity and physical function in older adults: the 45 and up study. *Journal of the American Geriatrics Society, 60*(4), 719-725.
- Zhou, J., Shin, S. J., Brass, D. J., Choi, J., & Zhang, Z. - X. (2009). Social networks, personal values, and creativity: evidence for curvilinear and interaction effects. *Journal of Applied Psychology, 94*(6), 1544-1552.

Zimet, G. D., Dahlem, N. W., Zimet., S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.

## APPENDIX A

### IRB CERTIFICATION MATERIALS AND INFORMED CONSENT FORM

Office for Research  
Institutional Review Board for the  
Protection of Human Subjects

THE UNIVERSITY OF  
**ALABAMA**  
R E S E A R C H

July 12, 2013

Jackie Brodsky  
Dept of Library and Information Studies  
CCIS  
Box 870252

Re: IRB#: 13-OR-243 "Social Supportive Interactions that Older Adults Seek when Learning to Use Information Technologies"

Dear Ms. Brodsky:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on July 10, 2014. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Please use reproductions of the IRB approved stamped consent forms to obtain consent from your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM CIM  
Director & Research Compliance Officer  
Office of Research Compliance  
The University of Alabama



358 Rose Administration Building  
Box 870127  
Tuscaloosa, Alabama 35487-0127  
(205) 348-8461  
FAX (205) 348-7189  
TOLL FREE (877) 820-3066

Office for Research  
Institutional Review Board for the  
Protection of Human Subjects

September 9, 2013

THE UNIVERSITY OF  
**ALABAMA**  
R E S E A R C H

Jackie Brodsky  
School of Library and Information Studies  
College of Communication & Information Sciences  
The University of Alabama

Re: IRB # 13-OR-243 "Social Supportive Interactions that Older Adults  
Seek When Learning to Use Information Technologies"

Dear Ms. Brodsky:

The University of Alabama Institutional Review Board has reviewed the  
revision to your previously approved expedited protocol. The board has  
approved the change in your protocol.

Please remember that your approval period expires one year from the date  
of your original approval, July 11, 2013, not the date of this revision  
approval.

Should you need to submit any further correspondence regarding this  
proposal, please include the assigned IRB application number.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM, CIM  
Director & Research Compliance Officer  
Office for Research Compliance  
The University of Alabama



358 Rose Administration Building  
Box 870127  
Tuscaloosa, Alabama 35487-0127  
(205) 348-8461  
FAX (205) 348-7189  
TOLL FREE (877) 820-3066



**Research Volunteers Needed**

A Ph.D. student at The University of Alabama is seeking adults ages 60 and older to answer questions about experiences with computers and the computer classes that have been held at [REDACTED]. Refreshments will be provided for participants.

- You must be at least 60 years old.
- It is not necessary to have attended the computer classes to participate in the study.
- You will be interviewed in person at [REDACTED] about your experience with computers and the computer classes at [REDACTED]. You will also play a short game of sorting index cards into piles.
- You will not need to use a computer during the interview.
- You will receive a \$5 Walmart gift card for participating in the study.

If interested, please contact Jackie at 205-657-2655 or email [jackie.brodsky@ua.edu](mailto:jackie.brodsky@ua.edu)

**Jackie - computer study  
657-2655**

## **INFORMED CONSENT FORM**

### **SOCIAL SUPPORTIVE INTERACTIONS THAT OLDER ADULTS SEEK WHEN LEARNING TO USE INFORMATION TECHNOLOGY**

You are invited to participate in a study about computer classes that have been held at [REDACTED]. This study is being done to explore social support that older adults seek from computer teachers. Your experience can help us to improve computer classes for older adults. The study is being conducted by Jackie Brodsky. She is a Ph.D. candidate in the College of Communication and Information Sciences at The University of Alabama. Her advisor is Laurie Bonnici, Ph.D. Dr. Bonnici is a professor in the College of Communication and Information Sciences.

#### **Background information:**

This study explores social support that older adults seek from computer teachers during computer classes.

#### **Procedures:**

The interview will take place in a closed office or room, and only you and the researcher will be in the room. The researcher will record the interview with an audio recorder so that she can transcribe later what was said in the interview. The researcher will ask you some questions about yourself. She will also ask you questions about your computer use and any disabilities you may have. She will then present you with index cards that you will sort into different piles on the table. The cards will contain statements about computer instructors, and you will sort them into piles according to how important the statements are to you.

#### **Compensation:**

At the end of the interview, you will be given a \$5 Walmart gift card. You will receive the gift card even if you choose to end the interview early.

UNIVERSITY OF ALABAMA IRB  
CONSENT FORM APPROVED: 9-9-13  
EXPIRATION DATE: 7-10-14

**Risks and benefits:**

The study has few risks. Benefits include helping researchers understand older adults' experiences with computer classes. Understanding these experiences can help improve computer classes for older adults.

**Confidentiality:**

The records of this study will be kept confidential to the extent allowed by law. Research records containing names will be stored in a locked office. Only the researcher will have access to these records. Publications of this study will not include participants' real names.

**Voluntary nature of the study:**

Participation in this study is voluntary. Your decision whether to participate or not will have no effect on your relationship with [REDACTED] or The University of Alabama. If you decide to participate, you may skip any question. You may stop the interview at any time. Stopping the interview will not affect your relationships with [REDACTED] or the University.

**Presentation of research findings:**

After the study has ended, the researcher will return to [REDACTED] to present her findings at an open meeting. You will be invited to attend this meeting to learn about the research findings. You will not be identified in the presentation.

**Contacts and questions:**

The researcher conducting this study is Jackie Brodsky. You may ask her any questions you have now or later. After the study, you may reach her at 205-657-2655 or by email at [jackie.brodsky@ua.edu](mailto:jackie.brodsky@ua.edu). You may contact Laurie Bonnici, Ph.D. at The University of Alabama at 205-348-8824 or by email at [lbonnici@slis.ua.edu](mailto:lbonnici@slis.ua.edu). If you have questions or complaints about your rights as a research participant, you may call Ms. Tanta Myles, the Research Compliance Officer of The University of Alabama at 205-348-8461 or toll-free at 877-820-3066. You may also ask questions, make a suggestion, or file complaints and concerns through the IRB Outreach Website at

UNIVERSITY OF ALABAMA IRB  
CONSENT FORM APPROVED: 9-9-13  
EXPIRATION DATE: 7-10-14

[http://osp.ua.edu/site/PRCO\\_Welcome.html](http://osp.ua.edu/site/PRCO_Welcome.html). After you participate, you are encouraged to complete the survey for research participants that is online there, or you may ask Jackie Brodsky for a copy of it. You may also email the Office of Sponsored Programs at [participantoutreach@bama.ua.edu](mailto:participantoutreach@bama.ua.edu)

You will be given a copy of this form to keep for your records.

---

I understand that by signing this form, I acknowledge that I have read or listened to the above information. I am 19 years of age or over. I have asked questions if needed. I have had any questions answered. I consent to participate in the study.

\_\_\_\_\_ **Date** \_\_\_\_\_  
**Signature of Research Participant**

\_\_\_\_\_ **Date** \_\_\_\_\_  
**Signature of Researcher**

UNIVERSITY OF ALABAMA IRB  
CONSENT FORM APPROVED: 9-9-13  
EXPIRATION DATE: 7-10-14

## APPENDIX B

### INTERACTIONS OBSERVED IN ICT INSTRUCTION VIDEOS

Video #	<u>1</u>	<u>2</u>	<u>3</u>
<b>Emotional</b>			
<u>Displaying a good sense of humor:</u>			
Instructor joked with students	4	4	4
<ul style="list-style-type: none"><li>• “When you go in the doctor’s office and the secretary is working really hard, [playing solitaire] is what they’re really doing.”</li><li>• “Anyone who wins at solitaire should get a special bonus.”</li></ul>			
<u>Using a gentle tone of voice:</u>			
Instructor spoke softly while explaining something to a student	3	2	3
<ul style="list-style-type: none"><li>• Creating a folder.</li><li>• Locating icons on desktop.</li></ul>			
<u>Gently touching on the shoulder:</u>			
Instructor gently touched individual students on the shoulder during interaction	9	6	3
<ul style="list-style-type: none"><li>• Gently pat student on both shoulders while standing behind her and saying, “Okay.”</li><li>• Gently touched student on shoulder when student performed a task correctly.</li></ul>			
<u>Comforting:</u>			
Instructor considered students' comfort with computers	1	5	5
<ul style="list-style-type: none"><li>• “Whatever is comfortable for you.”</li><li>• “Y’all aren’t going to hurt anything by playing around.”</li></ul>			

<u>Understanding/accepting situation:</u>			
Instructor exhibited understanding of instructional needs, including accessibility issues	5	8	8
<ul style="list-style-type: none"> <li>• “Who needs help with that?”</li> <li>• “Some people need to enlarge the font.”</li> </ul>			

## **Instrumental**

<u>Providing equipment to use:</u>			
Instructor provided laptops and mice for student use in each session (and replaced broken power cord in week 3)	1	1	2

<u>Demonstrating tasks on instructor's computer:</u>			
Instructor's computer desktop was projected on a screen in the front of the classroom to demonstrate various tasks	7	10	15
<ul style="list-style-type: none"> <li>• Desktop</li> <li>• Keyboard</li> <li>• Microsoft Word</li> <li>• Google</li> </ul>			

<u>Taking over and performing tasks:</u>			
Instructor took hold of student's mouse or began typing on keyboard to perform task for student	8	13	11
<ul style="list-style-type: none"> <li>• Creating a new folder</li> <li>• Dragging and dropping</li> <li>• Locating icons on desktop</li> </ul>			

## **Informational**

<u>Using familiar analogies to explain unfamiliar concepts:</u>			
Instructor compared keyboard to "just like a typewriter" or folders like boxes "to keep recipes in one place"	3	8	4
<ul style="list-style-type: none"> <li>• Menu - “Like reading the menu in a restaurant.”</li> <li>• Microsoft Word - “Just a plain piece of paper.”</li> </ul>			

- Minimizing a window – “Like you closed the closet door. The clothes are still in there. You just can’t see them.”

Providing verbal guidance:

Instructors verbally stepped through a task with students individually or as a group	29	52	34
<ul style="list-style-type: none"> <li>• Locating keys on keyboard</li> <li>• Using mouse</li> <li>• Locating icons on screen</li> <li>• Opening and closing programs</li> </ul>			

Providing instructional materials/handouts:

Instructors provided folders to students containing “cheat sheets”	1	1	1
<ul style="list-style-type: none"> <li>• Folder provision</li> <li>• “Cheat sheet” provision</li> </ul>			

Answering questions:

Instructor answered questions from students individually or in front of the group	7	8	6
<ul style="list-style-type: none"> <li>• Mouse care</li> <li>• Gmail</li> <li>• Flash drives</li> <li>• Scrolling</li> </ul>			

**Appraisal**

Acknowledging prior ICT experience:

Instructors built upon previously learned materials or acknowledged students had prior experience/computers at home	7	4	3
<ul style="list-style-type: none"> <li>• Acknowledged prior experience with mouse</li> <li>• Next week, will do more with what we learned this week.</li> <li>• Some people’s home computers may not have passwords like the laptops do.</li> </ul>			

Validating prior experience:

Instructors used correct terminology (not	2	3	4
---	---	---	---

"dumbing down" lessons) and gave preview of upcoming lessons

- System processor
- Dialog window
- Creating email accounts next week

Redirecting when student makes a mistake:

Instructor informed student about mistake and redirected to correct way to perform task

2 6 4

- Right vs left mouse button
- Closing new folder
- Inserting extra spaces within words

Telling when student is doing the right thing:

Instructor praised student for performing a task correctly – “There you go,” “You did it,” etc.

4 10 4

- “Isn’t that cool?”
- “You got this.”

## APPENDIX C

### INTERVIEW QUESTIONS

#### **Demographic:**

Age  
Sex (Note sex of participant.)  
Race  
Ethnicity  
Level of education completed

#### **Social Situation:**

Living situation (alone/with spouse/with children/with others)  
Hours/week spent with family  
Hours/week spent with friends  
Hours/week spent at Seniorland

#### **ICTs:**

Took ICT classes? Yes/No  
If yes, where? When?  
Went to tutoring sessions at Seniorland? Yes/No  
If yes, when?  
How long using ICTs?  
Use ICTs at home?  
Use ICTs at Seniorland?

Tell me about the first time you took computer classes.

When?

Where?

How did you feel when you first began the classes? Scared? Nervous?

How did you feel when the classes ended (if they have ended)?

What did you learn in those classes?

What were the most helpful things the instructor did to help you learn?

What did the instructor do that was not helpful?

What did the instructor fail to do that could have been more helpful?

(Conduct card-sorting exercise #1 at this point.)

**Physical Access Challenges:**

What difficulties if any, do you have reading a computer screen?

What difficulties, if any, do you have hearing what comes out of the computer speakers?

What difficulties if any, do you have using a computer keyboard or mouse?

How did those difficulties affect your computer classes?

Did you make these difficulties known to the instructor?

Did the instructor take these things into consideration during your classes?

How or how not?

(Conduct card-sorting exercise #2 at this point.)

## APPENDIX D

### CARD-SORTING EXERCISES

#### **Exercise #1:** Modes of interaction considered important

Section labels on board:

- Very Important
- Somewhat Important
- A Little Important
- Not At All Important

Interviewer: So, now we're going to do the first activity, and I'm going to explain is this board. This board is divided into sections ranked in order of importance. This is how important it is to you. "Very Important" is really important. "Somewhat Important" is less important than "Very Important." Then, "A Little Important" is less important, and then "Not at all important" is not important at all to you. And what are on these cards are behaviors of a computer instructor. So, say you went into a class, and you were going to learn how to do something on the computer. How important to you are these behaviors that a computer instructor would show? So, take the card, look at it, and decide how important it is. If you put it down in the "Very Important" section, and maybe you think it's very important, and then you look at it again and say, "Oh, it's not as important as I thought it was," you can change the section of the board that you put it in while you're doing the exercise. And then when you get to the end, and if there's some behavior that isn't on these cards, but you think you might be important, or something that isn't important, you can add a card if you like, which is why I have these blank cards. So, here are the cards. And if there's anything you don't understand, let me know.

#### **Exercise #2:** How often each mode of interaction would be sought

Section labels on board:

- Always
- Often
- Sometimes
- Seldom
- Never

Interviewer: So, now we're going to do the second activity, and I'm going to explain is this board. This board is divided into sections ranked in order of how often you would seek these behaviors while learning to use computers. "Always" is always. Every time you go in there, you want to experience this behavior. "Often" is less often than always, then there's "Sometimes," then "Seldom," and then "Never," which is absolutely never. This deck of cards is identical to

the deck of cards in the other activity. They are the same behaviors, only instead of asking you how important they are, I want you to decide how often you want to experience them. And again, you can change your mind. If you put it down in the “Always” section, and maybe you decide think that you really wouldn’t want to experience it always, you can change it to another section, like “sometimes” or something else. Again, there are blank cards, so if there’s some behavior that isn’t on these cards, but you think you might want to experience it always, or never, or whatever, you can add a card if you like. So, here are the cards. And if there’s anything you don’t understand, let me know.

Deck: Emotional (being made to feel more comfortable, being set at ease)

Cards:

*Using a gentle tone of voice with me*

*Gently touching me on the shoulder*

*Displaying a good sense of humor*

*Comforting me*

*Understanding/accepting my situation*

*Other (specify)*

Deck: Instrumental (having material needs met)

Cards:

*Providing me with equipment to use*

*Demonstrating tasks for me on instructor’s computer*

*Taking over and performing tasks for me on my computer when I’m confused or*

*stuck*

*Other (specify)*

Deck: Informational (given guidance and instruction)

Cards:

*Using analogies to explain unfamiliar concepts*

*Providing verbal guidance (stepping through a task with me)*

*Providing me with instructional materials and handouts*

*Answering questions I ask*

*Other (specify)*

Deck: Appraisal (given feedback about performance)

Cards:

*Acknowledging my prior ICT experience (not starting at square one if we  
don't need to)*

*Validating of my prior experience (Not patronizing me)*

*Redirecting me when I make a mistake, from incorrect to correct*

*Telling me when I am performing a task correctly*

*Other (specify)*

APPENDIX E  
THEMATIC CODEBOOK

Code/Subcode	Number of Transcript	Number of Passages
ICT use at home	19	45
ICT instruction setting	20	65
Emotions during ICT instruction	20	80
ICT instructor helpfulness	19	42
ICT instructor unhelpfulness	10	13
What ICT instructor could have done better	12	19
Interest in future ICT classes	8	16
Disability	15	41
Disability disclosure to ICT instructor	7	11
Accessibility tool knowledge	9	10
<b>Thinking aloud during card-sorting</b>	<b>15</b>	<b>251</b>
Emotional support	12	70
Instrumental support	10	52
Informational support	11	63
Appraisal support	10	64
Additional cards	2	2
Letting me do the task	1	1
Patience	1	1
Problems with cards	9	18
Interest in Seniorland	2	3
Self-deprecation	10	18
Debriefing remarks	10	23
Great quotes	10	19

## APPENDIX F

### CHART FOR RECORDING CARD-SORTING RESPONSES

Participant # _____	Importance				How Often					Never			
	Very	Somewhat	A Little	Not At All	Always	Often	Sometimes	Seldom					
<b>Emotional</b>													
Using a gentle tone of voice with me													
Gently touching me on the shoulder													
Displaying a good sense of humor													
Comforting me													
Understanding/accepting my situation													
<b>Instrumental</b>													
Providing me with equipment to use													
Demonstrating tasks for me on instructor's													
Taking over and performing tasks for me													
<b>Informational</b>													
Using familiar analogies to explain unfamiliar													
Providing verbal guidance (stepping through													
Providing me with instructional materials and													
Answering questions I ask													
<b>Appraisal</b>													
Acknowledging my prior ICT experience													
Validating my prior experience													
Redirecting me when I make a mistake													
Telling me when I am performing a task corre													