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OLDER KOREAN-AMERICAN ADULTS’ ATTITUDES TOWARD THE COMPUTER

A Dissertation in

Adult Education

by

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ABSTRACT

This study seeks to gain a holistic understanding of how older Korean-American adults’ socio-demographic factors affect their attitudes toward the computer. The research was guided by four main questions: (1) What do participants describe as the consequences of their using the computer? (2) What attitudes toward the computer do participants describe and reveal? (3) How has direct exposure to computer operations and usage affected inexperienced users’ attitudes toward the computer? and (4) How have socio-demographic factors shaped participants’ attitudes toward the computer?

This study utilized grounded theory to analyze the responses of sixteen older Korean-American adults in Baltimore, Maryland. One-on-one personal interviews were conducted with 16 participants of the Baltimore Christian Center for Korean Older Adults and Calvary Presbyterian Church.

The findings showed that older Korean-American adults’ consequences of using the computer made them recognize both benefits and harms associated with computer use. This process included their direct and vicarious computer experiences. It affected their formation of “perceived consequences of computer use” into four modes: a) abundant b) adequate c) insignificant and d) counterproductive. Also, they tended to have four modes of attitudes: a) enthusiastic b) receptive c) ambivalent and d) unreceptive toward the computer.

Computer-inexperienced participants showed attitude changes after having computer presentation sessions. The changes revealed three forms of attitude change: upward change from unreceptive to enthusiastic toward the computer, status quo, and downward change from ambivalent to unreceptive attitude. In this process, each participant experienced application of consequences, benefits, and harms into his or her own practical situation, and their decisive
factors affected their formation of attitudes. Those decisive factors were their standards and values of late-life management such as health status, management of daily living activity, and practice of religious faith.

Interestingly, participants’ socio-demographic factors affected their formation of attitude toward the computer utilizing two modes, utilizing perceived factors and latent factors. In terms of a path utilizing perceived factors, participants recognized and understood that their own perceived factors such as age, health condition, gender, intellectual curiosity, learning environment, religious faith, and types of temperament, were affecting their attitudes toward the computer. In terms of utilizing latent factors, participants didn’t recognize the presence of unrevealed factors, including Socio-demographic Status (SES) when they were young and type of immigration to the United States. These two latent factors strongly affected their formation of attitudes toward the computer without the awareness of the participants.

These findings may be applicable for administrators, instructors, and program planners for older adults’ computer training and may also affect choice of instructional methods, environmental preparation, content of training, and evaluation of computer training. Further research is recommended, including cross-cultural research with different ethnic groups, the process of attitude changes towards computers, application of longitudinal and observation methods, and studies that specify the duration, frequency, and types of computer use.
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PREFACE

I was raised in a Korean agricultural community led by older adults. Both in the family and in the community, older adults as leading members were the norm in our culture. However, while I was studying for my B.A. in Sociology in Korea, I perceived a significant shift in Korean society. It seemed that the more developed our economy became, and as society required younger and more technically skilled workers, the less value Korean society placed in its older adults. Consequently, families became increasingly nuclear, older adults were no longer integrated into families and communities, and they became isolated both from family members and from society.

I witnessed a reduction in human value and a lack of learning opportunities among older adults in Korea. Older adults began to live by themselves because they were no longer responsible for their traditional roles such as leading a family, taking care of grandchildren, educating their descendents, and helping descendents with house chores. Accordingly, other significant problems arose: they did not know how to manage free time and society did not provide services for older adults. In response to these concerns, I came to the United States to major in adult education and minor in gerontology. In the United States, I had many opportunities to meet older Korean-American adults and found that when compared to their counterparts in Korea, they had additional problems. The most significant issue was a lack of coping skills needed to survive overseas. The main barrier was limited English proficiency, combined with emotional issues including loneliness, nostalgia, and lack of self-esteem.

To address these issues, numerous programs were started throughout the United States by public funds and by the Korean community as non-profit organizations. A director of a program at the Baltimore Christian Center for Korean Older Adults wanted me to become involved with
the program because of my educational background, that is, my major in adult education. I became a teacher and a program planner for the center to improve and sustain the well-being of Korean-American older adults.

While I was working with the older Korean-American adults, I used the computer to present information to adults, but I soon realized that half of the participants of the program thought that computer use in the classroom was inappropriate. They explained that they regarded it as an entertainment tool, not as a learning medium. Additionally, they believed that the computer was inappropriate for older adults not only because it required too many technical skills, but also because it required active visual and tactile senses. When I used a computer in the class, they became frustrated, ignored the computer, did not stay focused on the classroom activity, and were distracted or engaged in conversations with other people. When they became frustrated, they asked me many questions about why I brought the computer into the class and why they had to view it. Later, they complained about the size and complexity of the screen. Some students left in frustration, and finally, the computer had to be turned off to resume the class.

While I was exchanging opinions with teachers and administrators from other learning centers for older Korean-American adults in Baltimore, they concurred that they had not used the computer during the classroom activities. They also perceived the learners’ negative attitude toward the computer.
CHAPTER 1

Introduction

Although the preceding discussion focused on older Korean-American adults’ negative attitude towards the computer, my experience raises a larger question for me: Generally, what are older Korean-American adults’ attitudes toward the computer? In this study, I will examine older Korean American adult’s attitude toward the computer. To explore this topic I will examine the following questions: (a) what are the attitudes toward the computer? (b) what are older adults’ attitudes toward the computer? (c) what are the factors that affect older Korean-American adults’ attitudes toward the computer?

Attitudes Toward the Computer

Perspectives on Attitudes Toward the Computer

Empirical research on attitudes may be divided into four perspectives: 1) affective 2) behavioral 3) cognitive and 4) combination of all three, affective, behavioral, and cognitive. The affective perspective emphasizes emotional feelings (Bynner et al., 1972; Chirwa, 1992) and evaluative dimensions (Kahle, 1984) such as love, hate, passion, anxiety, good, bad, like, and dislike (Baker, 1992; Osgood, & Tannenbaum, 1955). Researchers within this perspective have treated the affective component as the main factor of attitude and some have even defined the existence of attitude by means of it (emotion) (Karvonen, 1967; Kats & Stotland, 1960). The most frequently used emotional terms are positive, neutral, negative, preference, like and dislike, anxiety level, favorable, and unfavorable.

The behavioral perspective is deeply rooted in the etymology of attitude. Originally, attitude was a term to describe body position in a painting (Kahle, 1984). For example, when a painter was sketching a model, the painter used the term “attitude” for describing the model’s
body position such as reading a book or dancing freely like a butterfly. Numerous theorists emphasize that human beings’ attitudes toward objects might be revealed as a form of behavior (Baker, 1992). If it is not exactly represented by an overt behavior at the moment, it still can affect his or her future behavior. For example, when a person hates dogs, his negative attitude can be revealed as form of behavior such as kicking or throwing a stone at a dog.

The cognitive perspective refers to the evaluative process (Osgood & Tannenbaum, 1955) or judgment of objects or situation. It derives from cognitive reasoning process including knowing and perceiving based on knowledge and beliefs (Karvonen, 1967). According to Karvonen (1967), frequently the affective and the cognitive component are likely to closely covariate.

It is accepted that attitude consists of affective, cognitive, and behavioral perspectives. Even though both affective and behavioral perspectives are important, each by itself is insufficient to describe attitudes. In describing attitudes, a person constantly evaluates, decides, and judges an object in a context and then reveals his or her attitude as a form of affective behavior (Bynner et al, 1972; Engemann et al., 1998; Ekpo, 1990; Rosenberg & Hovland, 1960). In the studies cited above, the attitudes are represented mainly as a combination of affection and action. It might be the reason that cognitive process is prerequisite of both affective and behavioral disclosure. In this study, cognitive perspective will not be recognized separately because it is already exists in the process of formation and implementation of behavior.

Within the broad perspective, one finds both quantitative, qualitative, and mixed method studies. The quantitative studies, mostly surveys, use Likert-type scales to measure the attitudes of subjects (Fann et al., 1989; Hergert et al., 1995; Koroghlanian & Brinkerhoff, 2000; Mackowiak, 1989; Mustafa, 2001). Qualitative and mixed studies use structured and semi-
structured interviews to elicit participants’ verbal and non-verbal behavior (Bockmann, 1999, Frank, 1999).

Older Adults’ Attitudes Toward the Computer

Older adults are often stereotyped as unable and unwilling to learn new technology. An extreme designation of this is called “techno-phobic,” meaning that older adults tend to be skeptical about and resistant to the use of new technologies (Carter & Honeywell, 1991). However, researchers and practitioners report both positive and neutral attitudes toward the computer (Flynn, 1989; Jay and Willis, 1992; Morris, 1994; White and Weatherall, 2000). For instance, White and Weatherall (2000) report that older adults have a positive attitude toward the computer, have a high acceptance of computers, and “are satisfied and enthusiastic to learn computer skills.” (p. 372).

Outstanding gerontologists define older adults as someone age 65 or older (Quadagno, 2002; Schaie & Willis, 1996; Weeks, 1996). In the older age group, the relationship between age and computer experience are the most frequently studied. It is generally reported that the older the adult, the greater the negative attitude toward the computer; conversely, the greater the computer experience, the more positive the attitude (Carter & Honeywell, 1991; Czaja & Sharit, 1998; Deollos & Morris, 1999; Jones & Bayen, 1998; Krauss & Hoyer, 1984; White & Weatherall, 2000).

Less frequently studied are factors such as gender, educational background, income, and instructor effect. The first two (gender and educational background) have mixed results. For example, Flynn (1989) in his study of jobseekers reports that women have more positive attitudes toward the computer than men. However, the results of Morris’ (1996) study of 422
older adults’ ownership and use or non-use of personal computers, indicates that older men are more likely to use computers than women. McGregor (1990) in his study of 300 older adults indicates that men feel more comfortable with computers than do women. Regarding educational background, Morris (1994) in his study of older adults’ with high school and college education backgrounds, reports the higher level of education, the more positive the attitude toward the computer. On the other hand, McNeely (1991) in his study of 120 older adults’ computer health lessons and their acceptance of computers, reports no effect of educational background on older adults’ attitudes toward the computer.

In terms of income, all of the researchers report that income has a positive effect on attitudes toward the computer. For example, in Morris (1996) and Festervand’s (1994) studies of older adults’ financial ability as a factor that influences attitudes toward the computer, the result shows the higher the income, the more positive the attitudes toward computer.

In terms of instructor effect, skills and knowledge in subject matter and thoughtful care of older adults’ physical barriers are recognized as important factors affecting older adults’ attitude toward the computer. For example, in Flynn’s (1989) study with 701 jobless older adults, he reports that the more skillful and thoughtful instructor magnifies older adults’ positive attitudes toward the computer.

Among the less frequently studied factors, ethnicity is recognized as a factor that affects people’s attitudes toward the computer (Sensales & Greenfield, 1995). Sensales and Greenfield (1995) researched people’s attitudes toward public computer use in Italy and in the United States and reported that those in Italy preferred to use a computer in the areas of administration of justice and did not prefer to use it for educational/testing and computer networking. However, the counterpart in the United States revealed exactly opposite preferences.
Older Korean-American Adults

An older Korean-American adult is defined as a person of Korean descent who is sixty-five years old or more currently living in the United States. Mostly they are immigrants from Korea in their young through old adulthood for academic, economic, or family-related reasons (Hur & Kim, 1984). In terms of attitudes toward the computer, there is only one study on older Korean-American adults’ attitudes toward the computer. The study focuses on their preference toward English teachers’ characteristics. In Kim’s (2003) study of 30 older Korean-American adult participants of senior learning centers in Philadelphia and Baltimore, she reports that most of the participants have a negative attitude toward using the computer during classroom activities. The study reports three factors that affect attitudes toward the computer. In terms of age, the study reports that the younger older adults (approximately 60 – 75) have more positive attitudes toward the computer than their older counterparts (over 75). Also, women show more preference in using the computer in class than men do. Finally, the longer they live in the United States, the more positive attitudes they have toward the computer.

Purpose of the Study

Studies about older adults’ attitudes toward the computer report that older adults have positive, neutral, and negative attitudes. Researchers and practitioners have found various factors that affect older adults’ attitude toward the computer such as age, gender, personal experiences with computers, income levels, and instructor effect. However, these studies provide descriptions about only part of the whole picture. The inconclusiveness of the results provided above demonstrates the need for a more holistic understanding of how older adults form their attitudes toward the computer. This study will contribute to such holistic understanding by focusing on older Korean American adults.
**Research Questions**

(a) What do participants describe as the consequences of their using the computer?

(b) What attitudes toward the computer do participants describe and reveal?

(c) How has direct exposure to computer operations and usage affected inexperienced users’ attitudes toward the computer?

(d) How have socio-demographic factors shaped participants’ attitudes toward the computer?

Current studies report that ethnicity affects peoples’ attitudes toward the computer (Sensales & Greenfield, 1995). When I taught at the BCC, I noticed that older Korean-American adults had negative attitudes toward the computer. Kim’s (2003) research supports my observation. In the outcome of this study, I will develop a theory that explains older Korean-American adults’ attitudes toward the computer. The findings of this study might be used by program planners, instructors, administrators, and teacher trainers for the target group to assess learners’ attitudes, plan instruction, shape new instructional objectives, suggest appropriate materials, and help make decisions on the appropriate teaching and learning strategies.

**Limitation of the Study**

In order to explain holistically how older adults form attitudes toward computers, their socio-demographic, cognitive characteristics, and physical abilities must be examined. However, for this study, due to limited time and budget, the latter two factors will not be observed.

Another limitation is the nature of research design. To provide a holistic understanding of how older adults form their attitudes toward the computer, the longitudinal method might be the most recommended method, however, since this study is not focusing on the change of older Korean-American adults’ attitude toward the computer but instead on their attitudes at the
moment of the research, this study adopts a cross-sectional method that gathers data at a single point in time (Merriam & Simpson, 2000).

There are several additional limitations to this study. First, the study is limited by my lack of qualitative research experience. Also, I may have biases. As a Korean, I have been taught to respect older adults no matter what they do. In addition, as a Korean and a Christian, I have a negative attitude towards some violent and sexually explicit aspects related to computer technology.
CHAPTER 2.
LITERATURE REVIEW

This chapter contains a discussion of literature on issues about the computer, educational benefits of the computer, attitudes toward the computer, factors affecting attitudes toward the computer, older adults’ attitude toward the computer, and older Korean-American adults’ attitudes toward the computer.

Educational Benefits of the Computer

According to Clark and Sugrue (1989), there exists a dispute in North America about research conducted on the effects of the computer on learning. There are two main perspectives positive and skeptic, about using the computer in learning based on the learning achievement evaluation. The latter party, endorsed by Clark and his proponents, is adamant in contending the lack of the computer influence on educational outcomes. Clark (1983) reiterates his negative position that computers do not determine learning, because the computer alone does not influence student’ achievement. In his perspective, the computer only permits the delivery and storage of instructional messages, but does not affect learning itself. He believes the reasons of indifferences in computer learning outcomes are based on the methods used, not the computer itself. Therefore, Clark (1983) concludes that the most important element is to plan the use of the computer around quality instructional design (p.250), because each learner has his or her own characteristics, such as different learning styles.

For example, Dillon and Gabbard (1999), Orr et al. (1998), and VarHagen & Zumbo (1990) performed research about computer effectiveness in learning and concluded that there is no convincing evidence for increased learning in computer environments, neither as a positive
impact on learning or on student performance. Lookatch (1995) also found similar results from his study and concluded that the most effective lessons were print-based.

However, predominant literature shows significant support that the computer provides more learning achievement compared with other multimedia such as audio, video, and paper-pencil based formats (Brett, 1997). Kulik and Kulik (1980, 1986) have repeatedly examined computer-based education studies. In 1980, they performed a meta-analysis of 59 independent studies of computer usage in the college classroom and found that computer-based instruction improved student achievement in 37 of 54 studies when compared to traditional lecture-based instruction.

In 1986, Kulik and Kulik performed another meta-analytic review of 101 computer-based education studies and suggested that computers made significant contributions to students’ academic achievement. In 1991, the same team examined more than 250 studies on the effect of using computer-generated learning on student learning. The evaluation of student learning in most of these cases was based on standardized tests. In general, significant improvements in learning were noted. According to Frank (1999), Kulik and Kulik, on ten different occasions, examined a total of 700 related studies and these studies indicated a moderate link between computer-assisted learning and student performance. With regard to individual studies, Brett (1997), Golas et al. (1995), McNeely (1991), Mbarike et al., (2000), and Sultan & Jones (1995) reported that the computer provided effectiveness in learning.

Therefore, Wells & Kick (1996) advocated using the full capabilities of the computer to increase learning effects. Without exception, older adults, with ages ranging from 60 to 89, revealed a significant learning achievement from computer-assisted instruction as part of a health education lesson on stroke-control knowledge (McNeely, 1991).
In conclusion, the positive stance of the computer effect in learning provides an assumption to perform this study. Existing literature provides enough empirical evidence for me to believe that the computer is an effective learning tool. This is one of the strong assumptions made to perform this study.

**How Attitude Affects Educational Benefit**

Attitudes have an impact on how the information that is directed to the learner is received. According to Karvonen (1967), attitudes work like a filter that strains unacceptable information or objects. Therefore, attitudes can be regarded as response tendencies. When people feel favorable towards an activity, they try to spend as much time as possible doing it, and they avoid doing those activities towards which they feel unfavorable. Also, the likelihood of students’ putting their knowledge to use is influenced by their attitudes for or against the subjects, because things that are disliked are often forgotten or avoided (Mager, 1984, p.7).

With regard to learning, numerous empirical study results in education showed a positive co-relationship between learners’ attitudes toward the computer and their learning achievements. When learners have positive attitudes toward the computer, they gain more learning achievement than learners who don’t have positive attitudes toward them (Frear, 1997; Mager, 1984; Mustafa, 2001; Sensales & Greenfield, 1995). Chirwa (1992) demonstrated that high school students who have high positive attitudes toward the computer contributed to organizing their work and to solving problems. This ensures that students who have positive attitudes have maximum gains in utilizing technology as a tool for learning.

On the other hand, students who view the computer as having a negative educational effect also view it as having an isolating effect on the individual (Sensales & Greenfield, 1995).
Consequently, they reveal less use of the computer and exhibit lower learning achievement in subject areas.

Attitude seems to affect learners’ behavior directly, because attitude affects motivation, a consistent willingness to learn and pursue given work. According to McMillan & Forsyth (1991), attitudes are primary factors of motivation. Individuals’ positive attitudes include more realistic views of self, greater expectations of success, and increased expectations of a favorable future (Means, 1997; Mehlinger, 1996). These influence their participation in the learning process and are finalized as a learning achievement. For example, Chirwa (1992) reported that students who have positive attitudes towards the computer experience success in classroom work and homework. He explained the reason was that the students became motivated to learn as a result of interacting with computers. They even increased their ability to organize and solve problems in the operation of the computer when using computers within subject areas.

On the other hand, attitude causes an indirect affect in learning. Learners’ attitudes towards the computer might affect enrollment and attendance of the learning session, thereby indirectly affecting learning achievement. For example, Frank (1999) studied students who attend business courses in urban colleges in New York State. Some of them did not have any interest in computer learning. They did not attend classes or came to classes when the sessions were about to end. When they were in class, they were disengaged from classroom activities, computer learning, self-operation of the computer, and group discussions and activities. They rather engaged in loud personal conversation with others during the class. Finally, only a few of them even finished the course, with low achievement.

Researchers found that diverse subjects: children (Bockman 1999; Bynner et al, 1972), high school students (Chirwa, 1992), undergraduate students (Fann et al., 1989; Frear, 1997;
McDonald, 1996), undergraduate students in Rome and Los Angeles (Sensales & Greenfield, 1995), and elementary and high school teachers (Chin & Hortin, 1993; Day & Scholl, 1987; Sammons & Strickland, 2000), showed significant positive correlations between attitude toward computers and learning achievement. The examples of their learning achievement might be for: gaining knowledge (Frear, 1997), developing skills (Mustafa, 2001; Sensales & Greenfield, 1995; Sammons & Strickland, 2000), specific subjects abilities (Bynner, et al., 1972; Frear, 1997; Mager, 1984), and the ability to solve problems (Chirwa, 1992).

**Attitudes**

*Perspectives on Attitudes*

The term attitude is derived from the Latin word *aptus*, meaning two different perspectives: ‘motor attitudes’ and ‘mental attitudes’ (Allport, 1973; Baker, 1992). First, through its use in the field of art, painting, or drama, it refers to the outward or visible posture (the bodily position) of a figure in a statue or painting. In this sense, the word implies a phoniness characteristic of actors and actresses who are pretending to be something other than their “real” selves (Kahle, 1984). Secondly, it means a subjective or mental state or preparation for action. According to Kahle (1984), proponents of the Wurzburg school of psychology in Germany *Aufgabe*, “ attitude” means “mind-set,” which implies something quite similar to the word attitude as it is used today. This is embodied in Allport’s (1935) classic definition of attitude: a mental or neural state of readiness, or being organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related.

Allport’s (1935) definition of attitude is the longest surviving and most widely adopted one, but there are other definitions of attitude. For example, according to Bynner et al., (1972)
and Ekpo (1990), attitude is used to describe the predisposition to perceive, feel, or behave toward specific objectives or certain people in a particular manner. Krench & Crutchfield (1969) defined attitude as an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individuals’ world (p.67). Even though these definitions of attitude are predominant in the study of attitude, when they are applied to the study of attitude toward computers, they show different features.

I identify three perspectives of attitude: 1) affective 2) behavioral 3) and a combination of affective and behavioral perspectives, based on a review of current research. First, the affective perspective emphasizes emotional feelings (Bynner et al., 1972; Chirwa, 1992), and evaluative dimensions (Kahle, 1984) such as love, hate, passion, anxiety, good, bad, like, and dislike (Baker, 1992). In 1957, Charles Osgood, Suci, and Tannenbaum advocated that affective or evaluative dimensions were important in the measure of attitude. This affective perspective has formed the mainstream of attempts to measure attitudes today, directly assessing only the affective or evaluative dimension (Kahle, 1984). Consequently, attitudes are operationally defined as preferences: likes and dislikes (Bem, 1970). Ekpo (1990) highlights attitude as a predisposition to perceive and feel toward specific objectives or certain people in a particular manner. Attitudes are derived from day-to-day experiences and they can be modified or changed according to needs. In the research of attitude toward multimedia, the affective attitudes are revealed as emotional terms such as positive, neutral, negative, preference, like and dislike, anxiety, favorable, and unfavorable. We can readily recognize that these are the most frequently used words to describe learners’ attitudes toward computer in current research.

Moreover, researchers have treated the affective component as the main factor of attitude and have even defined the existence of attitude by means of it (Karvonen, 1967; Katsz &
Stotland, 1960). However, the problem of this perspective is that affective attitude does not exist alone, because it is deeply embedded on the probability of behavior towards or away from an objective (Allport, 1935; Ekpo, 1990). The probability of behavior is a deeply latent mediating process within the individual’s personality determining how he/she will respond. Therefore, the affective and behavioral elements of attitude are inseparable in most cases because people reveal their attitude in terms of behavior.

Secondly, the behavioral perspective is deeply rooted in the etymology of attitude. In the 1870s, attitude was a jargon term for artists to describe body position in a painting or drama (Kahle, 1984). It implied a phoniness characteristic of actors and actresses pretending to be something other than their real selves (Fleming, 1967). Later, a concept of behavioral reality and motoric responses were implied. In 1915, William Thomas and Znaniecki underlined that “by attitude, people understand the process of individual consciousness, which determines real or possible activities of the individual in the social world” (p.22). The researchers perceived the inseparability of mental and behavioral components. But the problem was whether attitudes were measurable or not since they understood attitudes were deeply embedded in the psychological process. Therefore, they thought attitudes were not measurable, since human being’s attitudes were all about thinking and logic in the mind. While the debate was on, Likert (1932) and Thurstone (1928) contended that attitudes were measurable because attitudes could be revealed in forms of behavioral and verbal expression. As a matter of fact, according to Kahle (1984), many contemporary definitions of attitude are operational rather than strictly conceptual. Therefore, they define attitudes as what attitude scales measure, nothing more and nothing less. Most researchers assume that the evaluative information provides insight into probable behaviors and into the social experience that a person holds.
However, Deutscher (1966) proposed that attitudes rarely lead to behavioral responses. In some cases, attitudes are actually post-dispositions derived from responding rather than predispositions to respond (Bem, 1972). So they contend that we need to re-conceptualize attitude precisely and adequately in terms of its functional relationship with behavior.

Even though both affective and behavioral perspectives are important, each one is not enough to stand alone, because attitude is a mixture of both. Engemann et al., (1998) conceptualized attitudes as individual dispositions in which affective and behavioral tendencies are connected with the object. This perspective has been consistently emphasized by numerous proponents: Bynner et al., (1972), Engemann et al., (1998), Ekpo (1990), and Krench & Crutchfield (1969).

Therefore, the third perspective comprises a combination of the two: affective and behavioral perspective. Each perspective is equally important in the process of attitude (Engemann et al., 1998; Ekpo, 1990; Rosenberg & Hovland, 1960) because a person constantly evaluates, decides, and judges objects in a context and then reveals his or her attitudes as forms of affective behavior. In the studies, attitudes are represented as a form of affection because it captures well a person’s process of attitude in terms of affection and action. For example, Frank (1999) investigated twenty-two students who enrolled in and completed computer-based business courses in colleges in New York State with five dimensions: attitude, participation, physical context, social context, and learning style. The field notes revealed that the attitude of the twenty-two students was not very positive; most students were followers and avoiders. The followers tended to go along with other members of their respective groups. For example, Roger was a typical follower; he was very quiet, rarely commented, and just observed class activity. He
said that he enjoyed the class because of the strengths of the computer. However, he just went along with the rest of the group as a follower.

On the other hand, avoiders were neglected to show concern with the material by sidestepping the issue altogether. They disliked and didn’t show much interest in computer learning. They did not look at the computer screen, did not take control of the mouse to run a particular activity, and did not participate in the group discussions. Stacy was a typical avoider by these criteria. According to the field notes, she missed one entire session. She was totally disengaged from the activities of her group, turned her chair so its back faced the computer screen, and engaged in loud, personal conversations with other students. As we’ve seen in this study, participants’ affective and behavioral attitudes showed a co-relationship which revealed well their negative behavioral attitude toward computer learning. Therefore, the mixed perspectives, affective and behavioral, will be applied for this study.

In conclusion, attitude is defined as a predisposition to respond in a certain way (Allport, 1935) with affective and behavioral ways toward objects, persons, or symbols in a social environment.

Attitudes Toward the Computer

Researchers and practitioners have examined learners’ attitudes toward the computer with the research question, “What are learners’ attitudes toward the computer?” To examine constructed research questions for each study, theorists and practitioners have used three research methods: quantitative, qualitative, and mixed method. First, the quantitative research method forms the mainstream method in this area. Most of the researchers and practitioners have used various instruments to measure attitudes toward the computer. Among them, more than fifty percent of the researchers have used instruments that they have developed. They named them:
Computer Attitude Scale (Chirwa, 1992; Koroghlanian & Brinkerhoff, 2000), Computer Anxiety Scale (Jones & Wall, 1989), Computer Orientation Scale (Morris, 1989), Focus-Question-Analyze-Recommend (FQAR) (Mitra, 1994), Attitude Measurement or Instrument (Fann et al., 1989, Czaja & Sharit, 1998), and Attitude Questionnaire (Corston & Colman, 1996; Jegede & Okebukola, 1992; Mustafa, 2001). Among these, eight of the nine measurements have been developed for undergraduate students and only one for high school students. Question items measure an individual’s affective and behavioral attitudes such as enjoyment, feelings, positiveness, preference, frustration, friendliness, usefulness, fear, avoidance and willingness to learn, and confidence.

Several studies used pre-developed attitude measurements by others. For example, Corston and Colman (1996) used an “Attitude Questionnaire” developed by Collis in 1985, while Czaja and Sharit (1998) used “The Attitude Toward Computers Questionnaire (ATCQ)” by Jay and Willis in 1992, Dyck & Smither (1994), and Busch (1995) used “The Computer Attitude Scale” developed by Loyd & Gressard in 1984 and 1985. Specifically, this instrument was applied only for adult subjects ranging in age from 16 to 52, and mostly for undergraduate students. Gardner (1993) evaluated and compared different computer attitude scales, and they highly recommended Loyd & Gressard’s (1984) and Loyd & Loyd’s (1985) Computer Attitudes Scale (CAS), because the instrument contained important subscales such as anxiety, confidence, and affinity.

Those measurement tools have prefixed terms and descriptions about the boundaries and levels of attitudes for a certain target group. Consequently, the research findings are defined within those prescribed attitudes such as anxiety level (Jones & Wall, 1989; Mackowiak, 1989; Mahmood & Medewits, 1989; Okebukola et al, 1992), fear (Jones & Wall, 1989; Mahmood &

Secondly, the qualitative research method is not a frequently used one in this study area. For example, Druin (1999) and Frank (1999) used the qualitative method to scrutinize participants’ attitudes toward the computer. Frank (1999) described twenty-two students’ attitudes toward the computer. They were undergraduate students who had enrolled in and completed business courses in vocational education in New York State. He observed and kept field notes on students’ behaviors—interaction with computers, instructors, classmates, and personal behaviors—in eighteen computer-training sessions. Then he performed individual interviews. Frank then collected interview and observation data, which revealed that the attitudes of students were not very positive and their participation in classroom activities was neither high nor low. The outcome consisted not only of verbal expressions but also observed activities. Students mentioned: “I am still a little shaky on computers,” “Very confusing in learning computer,” “Computer learning is a pain in the neck,” “I felt connected,” “It was interesting to learn,” “I’m afraid,” “I can learn through the computer,” “It was intimidating,” and “I enjoyed it”.

As we can see, these verbal expressions capture the students’ emotional and judgmental perceptions to the computer quite well. The field note showed that students’ attitudes toward computers were demonstrated by their behaviors. Active participants of the class were
not afraid to take control of the mouse to run the interactive computer activities. They actively engaged in several group activities and encouraged others to use the computer. They asked their teachers questions. Less active participants were quiet, rarely commented, and preferred to observe others. Those who were avoiders of the activity did not look at the computer screen, did not take control of the mouse to run a particular activity, and did not participate in group discussions (p.53). Often, they missed sessions or came late. These descriptions of student behaviors also clearly revealed their attitudes. However, they didn’t identify themes from the data in terms of qualitative research method. Thirdly, Bockman (1999) used a mixture of the quantitative and qualitative strategies to examine fourth grade elementary school students’ attitudes and engagement toward the computer. The results of a quantitative “Student Attitude Toward Media Survey” suggested a strong trend toward the preference of computers over pencil-based instruction in the classroom. Middle and higher academic achieving students showed more positive attitudes toward computers compared to lower achieving students.

On the other hand, the qualitative data consisted of interviews and videotaped observations. The observation data showed the students’ degree of negative behaviors toward computers. Students’ frustration was demonstrated by behaviors such as throwing their hands up, rolling their eyes, yelling out for help, sighing, moaning, crumpling papers and throwing them into a wastebasket, and throwing their hands up into the air. However, the study didn’t mention students’ expression of positive attitudes toward the computer. In sum, all ability levels showed a preference toward computers saying: “for creating high quality products,” “most worthwhile,” “more willing to help others,” “more fun,” and “more interesting.” With regard to the research method, Bockman (1999) concluded qualitative data, rather than quantitative data, were more helpful in developing a better understanding of students’ attitudes toward the computer.
Through these quantitative, qualitative, and mixed method, research findings show learners’ attitude toward the computer in two forms—verbal concepts and behavioral features. The verbally conceptualized attitudes toward the computer are various such as positive, neutral, and negative attitudes (Frank, 1999; Hergert et al., 1995; Koroghlanian & Brinkerhoff, 2000; McDonald, 1996; Mustafa, 2001), preferences compared with other media (Bockman, 1999; Cardillo, 1996), like or dislike (Bockman, 1999; Jegede & Okebukola, 1992), anxiety level (Mahmood & Medewits, 1989; Okebukola et al., 1992), frustration (Bockman, 1999; Koroghlanian & Brinkerhoff, 2000), favorable or unfavorable (Mackowiak, 1989), enjoyment (Cardillo, 1996; Chirwa, 1992; Mahmood et al., 1989), enthusiasm (Bockman, 1999; Jegede et al., 1992; Okebukola et al., 1992), fear (Chin & Horton, 1993; Jegede & Okebukola, 1992), confidence (Mackowiak, 1989), comfortable (Chin & Hortin, 1993; McDonald, 1996), and interest (Bockman, 1999; Okebukola et al., 1992).

Among them, the predominant concepts used for current research are positive, neutral, and negative attitude, preference, liking, and enjoyment. Interestingly, those terms are all affective perspectives embedding emotional feelings (Chirwa, 1992) and evaluative dimensions (Kahle, 1984). For example, Chirwa (1992) investigated high school students’ attitude towards the computer with eighty-five students in grades 10 through 12 at Danville High School in Illinois using a measurement called The Computer Attitude Scale. The research findings showed that high school students have positive attitudes toward computers in terms of “enjoyment of computer operation”, “enthusiastic to learn it”, “comfortable to engage in study”, and “feeling that they learn subject matters”. In his study, these attitudes are revealed in terms of affective perspective.
I categorized outcomes of 19 research studies with positive, neutral, and negative attitudes that were used by the researchers. Overwhelmingly, the predominant number of studies—15 cases—showed positive attitudes with computers. Three studies show neutral attitudes, and only one study revealed negative attitudes towards computers. The subjects who had positive attitudes toward the computer varied in terms of their educational backgrounds. Among them, undergraduate students were the most frequently examined. They were from the University of Nebraska-Lincoln (McDonald, 1996), an English as Second Language course at Jordan University for Science and Technology (Mustafa, 2001), business courses in urban colleges in New York State (Frank, 1999), Northeastern University in Massachusetts, Business Communication Courses (Fann et al, 1989), and deaf students attending Gallaudet University (Mackowiak, 1989). Their characteristics are various from ESL learners, deaf students, and various majors with business, science, engineering, humanities, and psychology.

Teachers and administrators from elementary schools (Hergert et al, 1995) and secondary schools in Nigeria (Ekpo, 1990) and in Idaho (Sammons & Strickland, 2000) demonstrated positive attitudes toward computers with high school students in Illinois (Chirwa, 1992) and Nigeria (Jegede & Okebukola, 1992). Also, fourth grade elementary students in northern Illinois (Bockmann, 1999) showed positive attitudes towards computers.

The second large groups exhibited neutral attitudes towards computers. The subjects were undergraduates at Southwestern University (Koroghalanian & Brinkerhoff, 2000), undergraduate students in Italy at the University of Rome (La Sapienza) and in the United States at the University of California, Los Angeles (UCLA) (Sensales & Greenfield, 1995), and high school students in Perth, Western Australia (Okebukola et al, 1992).
Finally, only one study among them showed negative attitudes towards the computer. The subjects were sophomore and junior business students taking computer literacy courses in Southwestern University (Mahmood & Medewits, 1989). In terms of the somewhat outdated year, 1989, we can say that it is hard to find negative attitudes toward the computer among current studies, those from the late 1990s and early 2000s.

Less frequently visible descriptions of attitudes toward the computer are qualitative research findings such as frustration, pause (Cardillo, 1996), enjoyment (Cardillo, 1996), ignorance, nonchalance (Mahmood & Medewits, 1989), active involvement, commitment, attention, and superficial participation (Bockman, 1999) during the computer classroom activities. For example, Bockman (1999) asked, “What are the students’ attitudes toward computers compared to pencil-based media?” 54 fourth-grade students who lived in a suburban community in northern Illinois participated in the study. The collected observation data revealed descriptions of the subjects’ behavior as indicators of their attitude. For instance, students demonstrated frustration by throwing their hands up, rolling their eyes, yelling out for help, moaning, sighing, and crumpling their papers and throwing them into the wastebasket.

Older Adults’ Attitudes Toward the Computer

In the United States, several cultural factors were considered in choosing chronological age 65 and over as the definition of older adults. Life expectancy, eligibility for pensions, retirement age, and eligibility for most government-sponsored programs such as Social Security and Medicare (Weeks, 1996) are considered as important factors. However, there is really nothing magical about age 65, because old age and senility develop differently for each person (Schaie, & Willis, 1996). The age of 65 was chosen in 1935 when Social Security was implemented, largely because Germany’s Social Insurance Plan used that age as the demarcation
line for eligibility. Even though there are legitimate debates about the chronological age of 65, this number has been widely used in the United States to identify “the elderly.” It is considered the guideline for being considered an older person with several socially accepted reasons, such as retirement age, U.S. Census age categorization, eligibility of government-sponsored programs such as Social Security, Medicare, and pensions.

Older adults are often stereotyped as unable and unwilling to learn new technology (Carter & Honeywell, 1991). An extreme definition of this stereotype is “techno-phobic,” meaning that older adults tend to be skeptical about and resistant to the use of new technologies. As a result of this reluctance, the theoretical benefits of technology for older adults are not likely to be realized, if the population for which they are intended refuse to take advantage of them (Adler, 2002, P.B-1). However, researchers and practitioners show research outcomes that older adults have both positive and neutral attitudes toward the computer as well as the extreme negative viewpoint.

Older adults’ positive attitude toward the computer has been found with such descriptions as: ‘satisfied and enthusiastic to learn computer skills’ (Flynn, 1989; Jay & Willis, 1992), ‘positive to computer’ (McGregor, 1990; Morris, 1994; White & Weatherrall, 2000), ‘not fearful of computers’ (Breakwell & Fife-Schaw, 1988), and ‘acceptance of computer’ (Krauss & Hoyer, 1984; McNeely, 1991). According to Rich (1993), older adults also show neutral attitudes toward computers indicating they are cautious, but not negative (Carter & Honeywell, 1991; Ruth et al., 1989). Therefore, the mythology of older adults as “techno-phobic” toward computers is exaggerated.
Factors That Affect Attitude Toward the Computer

Factors Affecting People’s Attitude Toward the Computer

In the study of attitude toward the computer, the mainstream pattern is about the factors that affect attitude. The leading research question from numerous researchers and practitioners is: “What are the factors that affect attitude toward the computer?” The most significantly considered factors are computer experience level (Fann et al, 1989; Jones & Wall, 1989; Koroghlanian & Brinkerhoff, 2000; Mackowiak, 1989; Okebukola et al, 1992), gender (Bockman, 1999; Jones & Wall, 1989; Koroghlanian & Brinkerhoff, 2000; McDonald, 1996; Mitra, 1994; Morris, 1998), age (Jones & Wall, 1989; Koroghlanian & Brinkerhoff, 2000; Mackowiak, 1989; Morris, 1998), socioeconomic status (SES) (Jegede & Okebukola, 1992; Morris, 1998; Mustafa, 2001), academic achievement (Bockman, 1999; Jones & Wall, 1989; Mustafa, 2001), and multidiscipline areas (Fatt, 2003; Koroghlanian & Brinkerhoff, 2000; Mackowiak, 1989).

Less frequently observed factors are ethnic groups (Chirwa, 1992), years of education (Morris, 1998), learning style (Frank, 1999; McDonald, 1996), instructor expertise (Mitra, 1994), and occupations of the subjects such as educators, technologists, and artists (Druin, 1999).

According to researchers above, there are several agreements and disagreements regarding factors that affect attitude toward the computer. Gender is the most frequently examined factor and researchers and practitioners have agreed that there is no relationship between gender and attitude toward the computer (Bockman, 1999; Jegede & Okebukola, 1992; Jones & Wall, 1989; Koroghlanian & Binkerhoff, 2000; Mackowiak, 1989; Mitra, 1994; Morris, 1998). Secondly, it is interesting that all the researchers agree on the fact that students with more computer experience are all likely to have more positive attitudes toward the computer than those
with less experience (Fann et al, 1989; Jegede & Okebukola, 1992; Jones & Wall, 1989; Mackowiak, 1989; Mitra, 1994; Mustafa, 2001). Thirdly, they all agree that age (Jones & Wall, 1989; Koroghlanian & Binkerhoff, 2000; Morris, 1998), socioeconomic status (SES) (Jegede & Okebukola, 1992; Morris, 1998; Mustafa, 2001) and academic achievement (Bockman, 1999; Mustafa, 2001) are the factors showing a positive correlation with subjects’ attitude toward the computer, except for Jones & Walls’ (1989) study of the latest factor—academic achievement.

Though there is steady agreement on no-relevance between gender and attitude toward the computer (Bockman, 1999; Jegede & Okebukola, 1992; Jones & Wall, 1989; Mackowiak, 1989; Mitra, 1994; Morris, 1998), there are some researchers and practitioners who disagree. Campbell (1990), McDonald (1996), Shashaani (1997), and Todman & File (1990) specify that males have more positive attitudes toward the computer than do females. Research related to usage and access to computers has shown that males dominate enrollment of elective computer classes and camps, have more opportunities in informal social situations such as video arcades and computer clubs, and receive more encouragement for computer usage at home (Smith, 1987, p.480).

They conclude that the sex differences in computer usage and access and girls’ avoidance of computers and technology are due to gender role identity based on socialization of females. The association of computers with science and mathematics may cause girls to interact less frequently with computers. For example, Corston and Collman (1996) investigate the gender difference of 72 undergraduate students’ attitudes toward computers. They find significant gender difference, that is, male students have more positive attitudes than do females. A higher proportion of males say computers are easy to use and they are ready to learn even though they are unfamiliar with their use.
However, a majority of the researchers claim that there is no gender difference in attitude towards computers. Females also show positive attitudes with voluntary active participation in computer courses (Hess & Muira, 1985). Moreover, females on computer courses perform as well as their male counterparts and also figure equally among those with high grades. Busch (1995) investigates the relationship between gender difference and attitude towards computers with 147 undergraduate students who are enrolled in business administration at Norwegian College. The results show there is no significant relationship between gender and computer liking. Also, Dyck and Smither (1994) examine gender effects on attitudes towards computers with 219 young adults—average age 22.64 years old—undergraduate students in central Florida area and 132 older adults—average age 67.53 years old—living in the same area. They find no gender effects on attitude.

Numerous researchers perceive computer experience as the most important factor causing positive attitudes towards computers (Dyck & Smither, 1994; Jegede & Okebukola, 1992; Jones & Wall, 1989; Mackowiak, 1989; Mitra, 1994; Mustafa, 2001; Shashaani, 1994). Personal formal and non-formal computer experience affects a user’s affinity toward computers in terms of familiarity compared with inexperience. The formal and non-formal experience includes all the possible interactions within classroom activities, organized training, and personal uses of computers such as word processing or computer video gaming. For example, in Dyck & Smither’s (1994) study with 219 young adults—average 22.64 years old—and 132 older adults—average age 67.53—the results show there is a negative relationship between their computer experience and anxiety level. That means people have less anxiety when they have more experience with computers. Clarke & Chambers (1987) report that those who do not have computers at home or outside the classroom, as well as those who do not take computer classes,
have less positive attitudes toward computers. Thus, students who have prior computing experience show active participation in class computing activities than those who don’t have computer experience. With regard to computer experience, Yaghi (1997) has a specific opinion that the frequency of using the computer is a better indicator for computer exposure, because it is a more of a concrete form of computer experience.

However, Marcoulides & Wang (1990) emphasize that for some individuals, computer attitude is preset regardless of prior computer exposure. What affects the application of computers most significantly is the manner in which individuals perceive computers and the manner in which these are presented to them. Therefore, it has to be understood in the context of computer interaction.

Age is one of the frequently examined factors by researchers and practitioners (Jones & Wall, 1989; Koroghlanian & Binkerhoff, 2000; Morris, 1998). In current research, there is a debate about age and attitudes towards computers. On the one hand, age is considered to cause a positive attitude toward computers. For example, Dyck & Smither (1994) investigates 219 young adults—average 22.64 years old—and older adults—average age 67.53. Results show that the older adults have less computer anxiety than young adults. Also, older adults have more positive attitudes towards computers than compared to young adults. Older adults indicate a greater liking for computers than young adults. Overall, older adults are more positive about computers (better attitude, less anxiety, and more liking). He indicates that reasons for these age differences need further investigation. Possibly older adults have more positive attitudes because of the type of computer experience they have had. Perhaps the results of this research reflect attitudes of older adults who use-computers in basic-skill-based work and recreation environments, versus young
adults who use computers in university course work or professional-skill-based work environment.

On the other hand, Kershner and Hart (1984), and Krauss and Hoyer (1984) report a negative relationship between age and attitude toward computers. They say the attitude differences are particularly apparent when comparing younger adults with older adults (Krauss and Hoyer, 1984) and middle age with older adults (Kershner and Hart, 1984). They report more favorable attitudes toward computers from younger adults. This difference may be attributed in part to the recency of the computer revolution. For example, older adults might not have had experience with computers during their attendance at school. They also might have retired prior to the widespread appearance of computers in the workplace.

Morris (1989) performs 380 telephone interviews with adults aged of 17 to 90 who live in Muncie/Delaware County in Indiana. The result also shows a strong effect, that is, a negative relevance of age on their attitudes. However, there may be other interfering factors such as education level. It could be said that age is indirectly related to attitudes towards computers through education. This indicates that in addition that age, years of education achieved, is directly associated with attitudes regarding computers.

Not surprisingly, as a group, those who are older tend to have less formal education. Indeed, education is more likely to be of greater importance in determining attitudes toward computers than is age in-and-of itself. As a social category, those who are older tend to have less formal education than their younger cohorts, which reflects the patterns of change in our society. Consequently, education is more likely to have an effect on attitudes toward computers regardless of age; those who are better educated whether “young” or “old” will probably be more favorably disposed to these rapid advances in technology. Within the age range of 30-50, there is
a presumable positive co-relationship between age and positive attitudes towards computers. However, when we consider older adults, it could be different from the above cohort effect. Therefore, more studies are required with wide age ranges, such as from elementary students to older adults.

Socioeconomic status (SES) has a positive relationship with attitudes towards computers (Jegede & Okebukola, 1992; Morris, 1998; Mustafa, 2001). People with a higher level of income show more favorable attitudes towards computers (Kershner & Hart, 1984). Smith (1987) examines social-economic status and attitudes towards computers with 649 students from elementary, junior high, and high school in southwestern states. 318 students are selected from a middle class scientific community, and 331 students are selected from lower class rural area. The results show that middle-class students have more positive attitudes compared with class students from a poor, rural area. This might be understood in terms of the opportunities for computer experience and ownership of computers. Jegede & Okebukola (1992) also find that students of high socioeconomic status have more positive attitudes towards computers compared with students of low socioeconomic status in the Lagos metropolitan area of Nigeria.

There is a debate between multidiscipline areas and attitude towards computers. For example, Fatt (2003) investigates 201 undergraduate engineering and non-engineering majors in Nanyan Technological University and National University of Singapore in their attitudes toward the computer. Non-engineering students have more positive dispositions towards the computer while engineering students have lower positive scores. Also, Sensales and Greenfield (1995) probe the relationship between computer attitudes and four different academic fields of specialization: (1) humanities (literature, philosophy, and history) (2) psychology (3) sciences (physics, chemistry, and mathematics) and (4) engineering. Students in psychology and the
humanities are significantly more negative toward computers than are students in the sciences and engineering. Field of study is the variable that produces the main effects on negative attitudes towards the social effects of computers.

However, Mackowiak (1989) examines business administration and the computer information system major students as well as non-business students at Gallaudet University. He reports a fairly positive attitude toward computers regardless of study area. It reveals that the college major is not found to contribute to computer attitudes. Generally, students majoring in computer information systems and computer science have more positive attitudes towards computers than students majoring in other areas (e.g., education, art, English) and students who have not decided on their field of study yet. However, disparities in attitudes among various major groups are not statistically significant.

As Martin et al., (1992) recognize there is a scarcity of cross-cultural and ethnic group-related studies about attitudes towards computers. In two countries, Canada and China, Collis and Willams (1987) find that 2,105 Canadian and Chinese adolescents are positive in their attitudes towards computers. The Chinese students are significantly more positive in their attitudes toward computers than Canadian students. In addition, in both cultures, female participants agree that females have as much ability, whereas males are significantly more skeptical about females’ abilities to use computers. With regard to gender difference, Martin et al., (1992) study 226 American students who live within a 40 mile radius from downtown Washington, D.C. and 65 students of the former Soviet Union who live within 100 km from Moscow. They are eight to nine years old. Interestingly, they also show no statistically significant correlation as to gender and attitudes toward computers.
Sensales and Greenfield (1995) compare undergraduate students in Italy and in the United States with their different major areas and attitudes toward the computer. The subdivisions according to academic field of specialization are humanities (literature, philosophy, history), psychology, sciences (physics, chemistry, mathematics), and engineering. The findings show that average attitudes toward computers, science, and technology are often neutral. Students in psychology and the humanities, females, and native Italians are significantly more negative about the computer’s psychological and cognitive effects than are students in the sciences and engineering, males, and Americans. In sum, country and field of study are the variables that produce the main effects on negative attitudes toward social effects of computers. Americans and students of psychology and the humanities fear the computer’s social effects significantly more than do Italians or students of science and technology. Positive attitudes toward technology and computers show significant main effects for the variables or nationality and field of study, but not gender. Students in Los Angeles are more positive than those in Rome, whereas students in the humanities are distinctly less positive in comparison to students of all other fields about the role of science, technology, and computers.

An individual’s educational background, including years of education, is a debatable factor regarding effect of attitudes. Ekpo (1990) refers to a positive co-relationship between years of education and attitudes towards computers. 400 secondary school teachers in Nigeria reveal that all teachers have positive attitudes toward the use of computers. However, holders of post-graduate degrees tend to exhibit less positive attitudes than all other caliber of teachers. 80% of the post-graduate teachers support the positive statement, “I love trying out new teaching methods with my class,” as compared to more than 95% of teachers who held lesser degrees.
Teachers who have the least level of degrees attained tend to exhibit stronger positive attitudes to media-based learning as a whole.

On the other hand, Kershner and Hart (1984) contend that the higher levels of education have been found to possess more favorable attitudes toward computers. Morris (1988-89) performs 380 telephone interviews with 17 to 90 year old subjects in the Muncie/Delaware County, Indiana. In the study, he concludes that the years of education achieved are directly associated with positiveness of attitude regarding computers. Therefore, an example is that the less educated older subjects show less positive attitude toward computers compared with younger subjects.

Until now, most of the researchers and practitioners emphasized personal computer experience as a major factor affecting positive attitudes towards computers. And educational achievement, multidiscipline areas, and socio-economic status follow as the next important factors regarding positive or negative attitudes.

Factors Affecting Older Adults’ Attitude Toward the Computer

Researchers and practitioners have engaged in studying the factors affecting older adults’ attitudes toward the computer. As a result, various factors have been investigated to interpret these attitudes, with age as the most frequently examined factor. One group claims that there is a significant negative relationship between age and attitude toward the computer (Carter & Honeywell, 1991; Deollos & Morris, 1999; Festervand, 1994; Gomez et al., 1986; Krauss & Hoyer, 1984; McGregor, 1990; Morris, 1994) compared to younger adults. This group interprets the phenomenon on the basis of several reasons. For example, older people did not have many opportunities to use computers while they were in school, because computers were not in use at that time. Consequently, computers were not necessary in the workplace or at home. These
reasons are well understood in terms of cohort effect, that is, a certain group of people shares different technologies and cultural experiences in their lifetime. However, age alone does not affect their attitudes toward computers. There are other reasons such as their personal experiences with the computer, their experiences of deriving benefits from media, or just being used to different media.

The other group shows that there is no relevance between attitude toward the computer and age difference (Czaja & Sharit, 1998; Charness et al., 1992; Duncan & Bass, 1981; McNeely, 1991). Each person’s attitude seems to be formed without the cohort effects or age reasons, such as computer use in high school or the workplace. Therefore, this result indicates that the individual acceptance of the computer is derived from one’s own experiences with computer technology any time in his/her life. For example, McNeely’s (1991) study of 120 community-dwelling older adults, ages 60 to 89, reveals that most of them have positive attitudes toward computers, regardless of age differences.

In terms of personal experience with computers, a significantly coherent result has been produced in most studies. That demonstrates that personal computer experience is directly related to positive attitudes toward computers (Czaja & Sharit, 1998; White & Weatherall, 2000). However, McNeely (1991) and McGregor (1990) report that there is no relevance between them. In McNeely’s opinion, the former experience is not considered as an important factor affecting a person’s attitude. Rather, the computer is well accepted by older adults when the application is meaningful and enhances their quality of life (McNeely, 1991, p.229). However, Kelley et al.’s (1999) study shows that 49 community-dwelling older adults, ages 58 to 91, reveal a positive correlation relationship between personal experiences with computers and their attitudes. Positive computer experiences should increase feelings of self-efficacy, which should increase the likelihood that
the older adults will be willing to or want to learn and use computers. For example, older adults who have positive experiences with ElderComm, a website for older adults, show positive attitudes toward computers.

Educational background is one of the less frequently examined factors among older adults. The results show that, for the most part, educational level is not relevant to positive attitudes toward the computer (Flynn, 1989; McGregor, 1990; McNeely, 1991). However, recent studies show different results: there are significant positive relationships between education and positive attitudes toward the computer (Deollos & Morris, 1999; Morris, 1994). Even though older adults have had fewer chances to learn and use computers during their school days, the more educated older adults tend to have more positive attitudes toward computer technology.

For example, Morris (1994) examined older adults with higher educational backgrounds—at least a high school degree and one or two years of college—and revealed positive attitudes toward the computer. More research about educational backgrounds is expected, because current research outcomes show equal distribution of positive and negative relationships.

There are equally distributed opinions regarding attitude toward the computer when gender is considered. For example, Flynn’s (1989) study shows that women are the most committed computer users, showing satisfaction and enthusiasm compared with older adult males. However, Krauss & Hoyer (1984) and McGregor (1990) indicate that men feel more comfortable with computers than do women. Therefore, further research seems to be indicated to explore the reasons for this equal distribution of positive attitudes by older men and older women toward computers.

Less frequently studied factors are economic affordability and instructor effect. The economic affordability for computer training or buying one’s own computer shows a positive co-
relationship with attitude (Deollos & Morris, 1999; Festervand, 1994; Kelly et al., 1999), with the exception of Flynn’s (1989) study. Flynn’s study reveals that lower-income, older persons are the most committed and satisfied users regarding computer learning compared with higher-income older persons. The main reason is that they consider computer skills as a job requirement or necessary for employment.

Even though computer training by an instructor is a rarely examined factor, research demonstrates this is a very strong influence upon older adults’ positive attitudes toward the computer (Flynn, 1989; Redding et al., 1998). Since older adults have physical and cognitive limitations such as vision and hearing deficits, slow reaction speed, and memory loss, they expect instructors to be skillful as well as thoughtful when considering older adults’ barriers and difficulties to learning new concepts. Instructors’ attitudes about the subject matter and older adults’ ability to learn are strong factors that influence older adults’ attitudes toward the computer. However, caution is needed here, because Flynn (1989) observed instructor anxiety among older adults who are confronted with over-protective and less capable instructors.

**Older Korean-American Adults**

**Socio-Demographic Characteristics**

An older Korean-American adult is defined as a person who is a descendant of a Korean, aged sixty-five years or more and living in the United States. The majority of the older Korean-American adults are immigrants from Korea in their young through old adulthood for academic, economic, or family-related reasons. Many older Korean immigrants came to the United States to be with their families after the 1976 U.S. Immigration Act. This was the third wave of Korean immigration (Hur & Kim, 1984). The first wave occurred in the early 1900s, after the
implementation of the Chinese Exclusion Act of 1882; Koreans came to the United States and fully intended to return to their homeland.

The second wave began after the outbreak of the Korean War between 1951 and 1964. This immigrant population (14,027) consisted of war orphans (6,423), wives of American military personnel (2,256), and professional workers and students (5,445) (Jo, 1999). Some of the students changed their status to permanent resident (Koo and Yu, 1981). They are becoming older adults through the natural aging process.

Meanwhile, the third wave is called the “family immigration” wave (Han, 1986). Family immigrations to the United States began in 1965 when the new immigration law (Public Law 89-236) abolished the national origins quota system. This newly revised 1965 legislation has had diverse effects on immigration from various countries, especially its impact on the volume and composition of Asian immigration, which has been dramatic. Through this law the Asian share of the total immigration to the United States increased from 7.6% between 1961 and 1965 to 27.4% between 1969 and 1973, equaling the European share (27.3% from 1969 to 1973) for the first time in the history of American immigration (Hur & Kim, 1984).

One distinct characteristic of these later Korean immigrants is the fact that the majority of them were young and female. Approximately 70% of all Korean immigrants were under 30 years and only 3% of the entire Korean-American population consisted of the elderly (60 years or older) (Hur & Kim, 1984). Over this 12-year period (1966-1977), the greatest growth in total immigration was the proportion of young (under 10 years) and old (60 years and over), from 20.6% to 27.3% and from 1.0% to 3.7%, respectively (Kang & Kang, 1994). For example, the 1970 U. S. Census reported that there were 3,270 Koreans aged 60 years and over, which was 4.6% of the total Korean-American population then in the United States. In 2000, the population of Korean-
Americans in the United States numbered 1,081,091 and the number of Korean Americans over 65 years old was about 324,327 (U.S. Census, 2000). As a typical pattern of family immigration, younger Koreans who entered the United States became permanent residents or American citizens, and then invited their parents (Park, 1986). However, the majority of older Korean adults came to the United States to be with their adult children.

There are two main reasons for immigration in their old age. First, the main reason is based on strong tradition of kinship (Chung, 1992). Koreans are usually described as being strongly kinship-oriented. The core value of family is to fulfill family obligations properly. Therefore, older Korean adults’ main reason for coming to the United States is to assist their children and fulfill a responsibility to the well-being of their children. Adult children in the United States want their older parents to help with household chores and child rearing while the young adults are working.

The second reason is their adult children’s—who live in the United States—practice of filial piety for their parents. Filial piety provides the groundwork for all the other virtues, and its practice touches every aspect of life. In its most limited sense, filial piety involves reverence for one’s parents and a selfless devotion to their well-being (Han, 1986, p.65). Therefore, adult children in the United States invite their parents to serve them as part of a long tradition of filial piety.

Once older Korean adults immigrate to the United States, they sometimes have a difficult time adjusting to the rapidly changing environment. This is especially true of those who have left their comfortable socio-cultural environment and entered a new country in which customs and lifestyles are noticeably different from their familiar way of life. Various problems arise among these elderly immigrants, depending on whether they are pioneering minority elders who were
young when they migrated to the United States, or ‘followers of children’, who were already old when they migrated to the U.S. According to Park (1996), they suffer from aging in general, caused by the natural transition in the life cycle, and also from the abrupt changes they face as immigrants in particular in this alien socio-cultural environment.

Since studies on older Korean-American adults are scarce, the information about the group is limited, but there are some reported characteristics about older Korean-American adults. For example, older Korean-American adults’ marital status shows that half of them live with their spouse and half of them are widows. In Han’s (1986) study, among 192 older Korean adults in the Chicago Metropolitan area, 53.1% are married; 39.6% are widowed; and 7.3% are either divorced or separated. In a recent study, Park (1996) shows that among 315 older Koreans who live in Los Angeles County, 49.2% are married; 45.7% are widowed; 3.5% are separated; and 1.3% is divorced.

In terms of living arrangements, about 30% of the older Korean-American adults are found to be living in a traditional, three-generation family. The most common type of living arrangement for the older Korean-American adults is the independent household with 66.3%. The independent living arrangement brings about many inconveniences and problems for them: financial difficulties, language barriers, lack of transportation, lack of family contact, and loneliness. However, they choose to live independently because they want to live freely from their children and have friends close in their everyday living. In Han’s (1986) study, 52% of his respondents reside by themselves in their own house or apartment. Among them, 87% are living in apartments for the elderly, which are subsidized by the government, while 13% are still living in the same household with their children (Han, 1986).
Older Korean-American adults’ educational background is recognized as high considering Korea’s historical background. When they were in Korea, they suffered under the Japanese colonial period for 36 years until 1945 and then the Korean War from 1950-53. Therefore, all older Korean-American adults age 65 and older experienced the Korean War, and if they are 70 years or more, they experienced the Japanese rule as well. In those periods in Korea, acquiring an education was not easy for the common citizen. Han (1986) shows 23.2% of his subjects have a high school education and 45.2% have more than a middle school education. In Park’s (1996) study, older Korean-Americans in Los Angeles have somewhat higher educational backgrounds with 42.8% high school degrees compared with a group in the Chicago metropolitan area.

In terms of health status, nearly 70% of the respondents in Han’s (1986) study express themselves as healthy through self-report. Among 192 respondents, 28% of them are in excellent, 41% are in good, and 5% of them are in poor health. In Park’s (1996) study, among 315 older Korean adults in the Los Angeles area, only 8.7% of them report poor health.

The majority of older Korean-American adults are financially dependent on their children or the government. In the Korean tradition, when people get older, their children are responsible for taking care of their parents in financial, physical, and emotional matters. However, Park’s (1996) study shows the income status of older Korean-American adults is very low. The median yearly income level of the older Korean-American adults is $4,944 per year, while the U.S. total of 65 years and over is $8,478 per year. Approximately 70% of the respondents in his study have an income fall within the “$400 and higher” category, while about one-fifth of the respondents are in the category of “less than $200.” About a quarter of them receive $800 or more monthly. Overall, the median family income of the respondents is $412 per month.
In regard to work status, most of the older Korean-American adults are retired or stay home. Only about 10% are currently working with either part-time or full-time jobs. The most common type of work among the older Korean-American adults are babysitting, sewing in a garment shop, housekeeping, simple manual work in factories, and working in retail stores. Their lack of English-speaking skills is the main reason limiting their employment opportunities.

One of the unique characteristics of the older Korean-American adults is their high rate of adherence to Christianity. According to Han’s (1986) study, 94% of the respondents, in his study were affiliated with ethnic Christian churches. The rate of religious affiliation of older Korean-American adults is much higher than that of the same age group in Korea. Interestingly, many of the older adults were not Christians when they entered the United States, but later 44% of them became Christians while living there (Han, 1986). Korean community churches not only provide them with religious services, but also serve to give them various kinds of information, services, and material help, and act as social gathering places. Therefore, churches seem to perform the mediator role between older Korean-American adults and the larger host society (Park. 1996, p.69). Park also notes that approximately 90% of the total sample of respondents in his study report that they attend religious services regularly at least once a week.

There are several key points that point to older Korean-Americans experiencing social and psychological isolation, feelings of disrespect, and a desire to live independently. First, among various difficulties, social and psychological isolation are the most critical factors (Kang & Kang, 1994), largely ascribed to the language barrier. The older immigrants are socially isolated, not only from their neighbors, but also in their own home from their family because few American-born grandchildren speak the Korean language. Also, they don’t watch American television or read American newspapers and magazines because they cannot understand the
language and do not feel a cultural identity to Americans. They have difficulty using public transportation to visit friends or to shop. Rose (1968) called the phenomenon among immigrants as disengagement from the host society. Therefore, older Koreans often describe themselves as being “imprisoned” as practically “deaf, dumb, and blind” (Yu, 1973).

Secondly, older Korean-American adults feel that their children don’t treat them as heads of the household as much as they were or would have been in Korea. Traditionally in Korea, older adults live with their eldest son and his family in an extended family system. As heads of the family, the older adults are served, respected, and consulted by their children about family matters. However, in the United States, their roles and status are reversed. They are no longer served and consulted by their adult children; rather they have to serve and consult their children. Most of their adult children go to work for long hours in order to settle down securely in this new land. Therefore, they feel a deep discrepancy between the “expected role of respected elderly” and “the reality of degrading housekeeper” (Kang & Kang, 1994). This is the reverse role from that of being an authority in the household in Korea to that of being in a powerless and dependent position in the American home of a son or daughter (Han, 1986, p.19).

Thirdly, older Korean American adults show a strong desire to move from their children’s houses and live by themselves (Han, 1986). They think there are merits to living independently from their children when they move to apartments where their peers reside. They are able to visit other elderly friends and neighbors and engage in various activities such as playing games, going shopping, attending senior centers, participating in church activities, and enjoying public services. According to Koh’s (1983) study, 70.2 percent of older Korean Americans in New York City prefer to live in households separate from their children. Among
who live in joint households with children, almost 50 percent of them would have preferred to move out of their children’s home.

Older Korean-American adults report two significant difficulties confronting them in everyday living in the United States—language barriers and a lack of appropriate transportation. First, as newcomers to the foreign land, most of the respondents consider their inability to speak or understand English to be their most serious problem. Han (1986) reports that 76% of older Korean adults who live in Chicago Metropolitan area lack English speaking skills. All of them think this is the most serious problem because it hinders interactions with Americans. So they are afraid to meet Americans in public places such as a grocery shop, bus, public office, and hospital. This lack of English inhibits their ability to watch television and listen to the radio. If their city offers access to a Korean television or radio program, these are the only channels to connect. Conclusively, this lack of English skills brings isolation from the host society, causing loneliness and psychological difficulties.

Secondly, the lack of appropriate transportation causes another problem for older Korean-American adults. Among half of the older Korean-American adults who live independently from their children, most of them live in a downtown city area since they don’t possess their own vehicle. Going somewhere by car is hard, because their children are working and they don’t want to bother their children with transportation matters. On the other hand, they do not feel comfortable using the public transportation system because of physical problems or lack of English skills. So they lose the benefits of using transportation, that is, the medium of access to and harmony with the world around them. Adequate transportation greatly benefits older adults by facilitating their integration into society, as well as through the use of its resources by improving their quality of life (Han, 1986).
Older Korean-American Adults’ Attitudes Toward the Computer

Currently, there is no study about older Korean-American adults’ attitude towards the computer. However, one study briefly mentioned older Korean-American adults’ attitude toward English teachers using computer’ in the classroom. Kim (2003) studied 30 older Korean-American adults’ preference toward English teachers’ characteristics. The total subjects were 30 older Korean-American adults. 10 of them participated in English classes in Philadelphia and other 20 participated English classes in Baltimore. They are all at least 60 years old. The duration of living in the United States varies from 3 years to 33 years: 3-10 years (8), 11-20 years (13), 21-30 year (8), and 31-33 years (1).

One of the items in the study asks about older Korean-American adults’ preference about English teachers who use computers during the class. The result shows most of the participants have a negative attitude toward using computers during classroom activities (p. 21). However, female learners have little preference for teachers who use computers (Kim, 2003, p.21) compared with male participants. She also says that the longer the subjects lived in America, the more they preferred teachers who use computers. In terms of age, the younger people have more positive attitudes toward the computer than their older counterparts. Since the research questions are about older Korean-American adults’ preference toward English teachers, there is no further explanation about attitude toward the computer.

However, her study reveals one aspect of older Korean-American adults’ attitude toward the computer. As mentioned before, older Korean-American adults’ lack of English skills might be a possible reason for their negative attitudes toward the computer. Also, another possible interpretation of the phenomenon is their cultural differences. Older Korean-American adults tend to think that the American way of physical contact—kissing, hugging—and the way of
people clothing—body exposure—on television is inappropriate to watch. I recognized the strong negative attitude from my personal experience while I was teaching older Korean-American adults in Baltimore.

One unique finding of Kim’s is that there is a possibility of older Korean-American adults’ becoming familiar with and being more accepting of American culture by spending more time in the United States. She mentions that the more they have lived in the United States, the more they prefer to use the computer. So the gradual acculturation might be enough to affect their attitude toward the computer. Also, older female adults’ tendency to prefer the computer compared with males is still questionable. The lack of study in this area brings many questions with tangled factors and possible reasons. Therefore, further studies are expected to describe the phenomenon and construct theories to explain their attitude toward the computer.
CHAPTER 3.
RESEARCH DESIGN

This study explains how socio-demographic factors shape older Korean-American adults’ attitudes toward the computer. There are several substantive interests regarding this phenomenon. For example, participants’ computer experience includes both direct and vicarious experiences. Some of the participants have computer experience deriving from the workplace, day care center, home, or public facilities, but others have had vicarious experiences through contact with their children, workplace, pastors, teachers, neighbors, or friends. Vicarious experiences serve an important role and can therefore help participants recognize the factors affecting his or her attitudes toward computers.

Additional substantive interests in this study are ‘attitudes toward computers,’ ‘socio-demographic factors,’ and ‘attitudes toward using the computer after direct exposure to information about its operations and uses’. Attitudes toward computers reveal themselves through verbal expressions such as like, dislike, positive, enjoy, or interest and behavioral tendencies such as willingness to learn, willingness to use computers, or avoidance of computers. The socio-demographic factors that affect attitudes toward computers are expected to be age, gender, occupation, duration of living in the United States, income level, religion, interaction with children, and health. Since interest as well as prior and post attitudes of using a computer is relevant to the computer-inexperienced participants, the study includes two computer presentations about the roles and functions of the computer.

How socio-demographic factors shape participants’ attitudes toward the computer, how participants’ socio-demographic factors shape their attitudes, and how prior attitudes affect the
consequences of using the computer are epistemological interests for this study. Those epistemic interests will be explained through finding categories and properties.

**Research Questions**

a) What do participants describe as the consequences of their using the computer?

b) What attitudes toward the computer do participants describe and reveal?

c) How has direct exposure to information about its operations and uses affected inexperienced participants’ attitudes toward the computer?

d) How have socio-demographic factors shaped participants’ attitudes toward the computer?

**Sampling**

Organizations and individuals are two units of analysis in this study. The organizations selected for this study are Baltimore Christian Center for Korean Older Adults (BCC) and Calvary Presbyterian Church (CPC). The individuals are selected older Korean-American adults who attend these institutions.

**Research Site 1: Baltimore Christian Center for Korean Older Adults**

The Salt and Light Presbyterian Church opened the BCC, the Baltimore Christian Center for Korean Older Adults as an evangelization and education center in 1996 as a part of its outreach ministry. BCC was selected for this study because it was one of the renowned educational centers for Korean older adults among the Korean community in Baltimore area. According to Kim (2003), the participants of the program were highly satisfied with not only the quality of the program but also experienced levels of high learning achievement. Participants frequently reported their successful application of what they had learned in the center concerning everyday living, and showed a high rate (approximately 90%) of passing the U.S. Citizenship
test (Kwon, 2002). Moreover, the center has maintained a high number of participants since it was established. Most of the participants live in the publicly funded senior apartments within five miles of the center. The center’s mission is to provide learning experiences and sustain a Christian community among Korean older adults in Baltimore. The center’s goals are: “Through the Christian educational experience, the senior participants will be strongly bonded to God. Each participant will practice Christian love both within and outside the program. From the learning, learners will enhance their knowledge and skills to cope with life events.”

To meet its goals, the center offers various fixed and flexible educational programs including Bible study, English classes, courses covering American history and U.S. government for the naturalization examination (U.S. citizenship test), health care, dance and physical fitness, music, recreation, games, writing autobiography, writing personal checks, make-up, tea ceremony, and storytelling classes. Classes meet twice a week, Monday and Wednesday, from 10 a.m. to 2 p.m.

At the time this study was conducted, the population of the center included 53 participants, all over 65 years of age. They immigrated to the United States in either in their middle or old adulthood for economical, educational, or family-related reasons. All are native Korean speakers, with English as their second language; most have difficulties in listening, speaking, writing, and reading English. All the participants are retired and they either stay at home or spend time at an adult day care center during the day.

The senior center was recognized as not having a balanced age range, educational background, or types of vocational experiences. Most of the participants were middle-old (ages ranged from 75-84) and old-old (85 and more), and the center lacks young-old adults (age range from 65-74). Secondly, since 90 % of them had less than high school diplomas from Korea, high school and college graduates
were underrepresented. Most of them had blue-collar vocational experiences such as running small businesses, working as factory workers, or working as farmers. To compensate for this imbalance, a second site was selected.

Research Site 2. Calvary Presbyterian Church

Calvary Presbyterian Church (CPC) is also located in Baltimore, Maryland. It was chosen because of its larger number of older adults compared to other churches. The church was recognized as a model that practices Korean traditional filial piety for older adults, so the number of older adults is constantly increasing. Another reason for selecting the church was that there was a variety of age ranges of older adults who had various educational background and vocational experiences from white to blue-collar jobs. The main reason for selecting the church was that the directors of the Baltimore Christian Center for Korean Older Adults recommended the church as an outstanding church for the above reasons. The church is located in the eastbound section of Baltimore, very close to several Korean residential areas including Timonium, Towson, and Cockeysville.

The population of the church is 350. It consists of first-generation Koreans who immigrated from Korea as well as second-generation Koreans who were born in the United States. Among them, there are 72 older adults who are first-generation Koreans who immigrated in their middle or old adulthood. Their socio-demographic characteristics are various. For example, the ages range from young-old, middle-old and old-old, and they have diverse educational backgrounds including high school and college graduates. Accordingly, their vocational experience is various, too and included both blue and white collar workers.

The directors of the church recognized that the church plays important roles for the Korean older adults in terms of religious and social development. According to Schaie and Willis
(1996), many adults in the United States report religious beliefs and activities to be central to their lives, particularly older adults. This phenomenon is applicable to the Korean older adults, not only because of the significant statistics (more than 90 percent of the Korean-American older adults in the United States are Christians), but also because they are active Christians (Pang, 2000). According to the pastor of the church, most of the older adults attend services on regular basis and also participate in various church activities: prayer meetings, Bible study and reading, and education and health information sessions.

According to the pastor, the church emphasizes the practices of Christian love and Korean traditional care for older adults. There is an organization for the older adults and every person who is over 65 automatically becomes a member of it. The older adults have run the organization successfully by themselves with various activities as listed above.

There are several types of programs for adults: religious, social, educational, and health-related programs. First, the church’s religious programs focus on older adults’ attendance of church services, Bible study, and prayer meetings. The church emphasizes the older adults’ religious beliefs including the importance of salvation and the observance of the Ten Commandments. They have occasional services, Bible study, prayer meetings, and praise meetings for the older adults during the week.

The church is not only a place for the service, but also a place for meeting peers and obtaining various kinds of information. It provides educational programs, often run by professional volunteers, such as Bible study, social welfare sessions, and tutors for English and computer learning. Doctors from various fields are invited to help participants manage their health; for example, there is a dental clinic and ongoing informational programs on hygiene, osteoporosis, cancer prevention, rheumatism, and seasonal allergies. These sessions are not fixed,
but they are held during the turning point of the season or whenever specific attention is needed. Finally, the church also organizes day trips with refreshments for the older adults and provides occasional recreational programs. Also, young people lead recreational programs for the older adults on occasion, not only for fun, but also to decrease the generation gap.

**Initial Recruitment of the Participants**

To initiate recruitment of the participants for this study, the researcher contacted two directors in BCC and a pastor in CPC by telephone. The researcher was familiar with the directors and the pastor because he taught at the BCC and attended the CPC when he was in Baltimore. Moreover, the pastor and two directors were acquainted with each other, since the researcher invited the pastor to the center as a guest speaker several times. Because they wanted to understand better the dynamics among the older Koreans to provide better educational programs in the future, all of them were very cooperative for this study.

The researcher explained this study on the phone and sent them two kinds of documents: a request for cooperation from the pastors and directors and an invitation letter to be distributed to potential participants. The documents included the title of the study, reasons for conducting the study, aims of the study, required participants for the study, research questions, procedure of research, potential results of the study, benefits of the study, information about the researcher, and contact numbers of the researcher. Both directors and the pastor were cooperative and emailed approval letters to the researcher. Through the phone, we set up initial group meetings at the sites to meet the participants. After getting the approval letters from the centers, the researcher visited the centers on consecutive dates late in September to conduct recruitment. At the time of this study there were 71 older Korean adults aged 65 and more who were members of
CPC; 70 of them attended the recruitment session. All 52 older Korean adults aged 65 and over who were enrolled in BCC programs attended the recruitment session.

Among the 122 potential participants, 82 were females and 41 were males. All of them had migrated to the United States either in their middle or older adulthood for economical, educational, or family-related reasons. They were either permanent residents or citizens of the United States. More than 70 percent of them lived in publicly funded senior apartments, and the rest of them lived in their adult children’s houses in nearby Baltimore counties. All of them used Korean as their first language with English as their second language. Most had difficulties in listening, speaking, writing, and reading in English. The majority of the participants were retired and they either stayed at home or spent time at adult day care centers during the day.

The researcher distributed the invitation letters and explained the study to the older adults who attended the information session. There was a question and answer session about this study to help them fully understand what the study was about and why they were asked to participate. Some of them wondered at first and then confirmed that the researcher was not selling anything to them. The meetings were successful because they verbally expressed their willingness to participate in this study if the researcher needed them.

Criteria for Selecting Participants

Criteria used to select participants for this study were various, and included age, gender, educational background, duration of living in the United States, income level, devotion to Christianity, and computer experience. According to gerontologists’ perspective (Quadagno, 2002; Schaie & Willis, 1996), older adults’ age range was divided into three groups: young-old (65-74), middle-old (75-84), and oldest-old (over 85).
Gender was considered in the selection of participants regarding the possible gender-related cultural effects among the Korean older adults. Because many previous studies (Deollos & Morris, 1999; Flynn, 1989; Morris, 1994) showed that educational background affected their attitudes and their access to computers, educational background was another important criterion in selecting participants for this study. The participants’ educational background included their school attendance experience in Korea and in the United States.

Since a recent study (Kim, 2003) with the same ethnic group showed that duration of living in the United States had affected attitudes toward the computer, it was also recognized as an important socio-demographic factor to select participants for this study. The participants’ duration of living in the United States was divided into long-term residence (21 years and more) and short-term residence (20 years and less).

The participants’ income levels were divided into three groups: low, medium, and high. The standard was derived from the opinion of the directors of the center. The three groups of income level consisted of low income (less than $1,000.00 per month), middle income ($1,100.00 to $2,500.00 per month), and high income (more than $2,600.00 per month).

The participants’ devotion to Christianity was divided into more and less devotional Christianity groups according to outstanding gerontologists’ (Schaie & Willis, 1996) perspectives, such as participation in organized religious activities (attending church services, Bible study, prayer meeting, or serving as Sunday school teacher) and private religious behavior including prayer, Bible reading, watching religious programs on television, and helping others. The directors and the pastor evaluated the participant’s devotional Christianity from their experience with the congregants.
Participants’ computer experiences were divided into three groups: direct experience, vicarious experience, and inexperience. Direct experience meant the person actually used computers. Vicarious experience meant that the person had been exposed to the computers, but had no direct computer experience. For instance, a vicariously-experienced person watched other family members using computers or heard about the computer experiences of others. Inexperience meant that the person did not have either direct experience or vicarious experience.

Process of Selecting Participants

To select participants, several methods were applied in order to obtain each participant’s socio-demographic characteristics through document review and by a face-to-face interview with the director and the pastor.

Document Review

As the first step of data collection, the researcher performed a document review with ‘Personal Record’ at two sites to gather older Korean adults’ socio-demographic data. The personal record at BCC had each person’s name, age, gender, address, information about children, hobbies, religion, educational background, occupation, duration of living in the United States, and health condition. The personal record at CPC was not only less detailed than BCC, but also some of the older adults’ data was missing. It consisted only of the person’s name, age, gender, address, family members, year of church attendance, and year of baptism.

The collected data from the document review was insufficient to initiate the first sampling because of two problems. First, the personal record at both sites did not provide all the necessary information about each person such as educational background, duration of living in the United States, interaction with children, income level, computer experience, degree of
devotion to Christianity, and caregivers. Secondly, some of the person’s record at both sites was omitted or was not up-dated for his/her socio-demographic information (such as marital status, educational background, duration of living in the United States, and income level).

*Interview with the Director and the Pastor*

To compensate for insufficient data, the researcher along with a director and the pastor performed face-to-face interviews. Two face-to-face interviews were held at each site for two hours each. The researcher asked the older adult interviewees for any missing document review information, including socio-demographic information such as age, marriage status, educational background, occupation, duration of living in the United States, caregivers, health condition, residence type, and computer experience.

The collected data from the two methods—a document review and a face-to-face interview with the director and the pastor—provided sufficient information to initiate sampling.

*Theoretical Sampling*

First I divided the population into two groups based on duration of stay in the United States (over 21 years and fewer than 21 years). Glaser and Strauss (1967) advised that researchers start to select the first sample from groups that are theoretically shown to be relevant from the previous studies. Kim’s (2003) study showed that the longer Korean older adults lived in the United States, the more positive they were about using computers. Within each of the two subgroups, I followed the theoretical sampling procedures outlined by Glaser and Strass (1967), making decisions about successive participants to interview based on the emerging theory and the other criteria discussed above. (See below for a detailed discussion of the interviewing process).
Sixteen participants were interviewed before theoretical saturation was achieved: 11 who had lived in the US for 21 years or more, and 5 who had lived in the US for fewer than 21 years.

**Date Collection**

Participants with no direct computer experience participated in an information session, a pre-interview, a computer demonstration session, and a post-interview.

Participants who had direct (as opposed to vicarious) computer experience participated in only the information session and one interview session.

**Information Session**

There was a face-to-face initial meeting for 15 minutes to explain this study with the Informed Consent Form for Social Science Research. At that time, the participants signed two copies of the consent form for both the interviewee and the interviewer. At that time we decided on a time and a place to perform the face-to-face interview at participants’ convenience. Each interview was performed at the person’s preferred place, such as a room in the BCC or CPC, adult day care center, work place, or his or her home. If a participant needed transportation to go to a preferred interview site, the researcher provided the person with a ride.

**Initial Interview**

The initial interview was planned to collect the participant’s description about his or her attitudes toward computers, taking into consideration the person’s direct computer experience, vicarious experience, or inexperience. The pre-interview spent at least 90 minutes with each person and the session was audio-recorded to aid data collection. The interviews were semi-structured and began with the interviewee’s completion of their socio-demographic information: age, gender, type of occupation, duration of living in the United States, educational background,
income level, religion, duration of attendance at the senior center, marital status, and type of residence.

Then, the researcher asked the participant open-ended interview questions about his or her life in Korea, in the United States, health status, caregivers, interactions with offspring, computer experience, benefits of using the computer, and feelings about the computer as well as the reasons for these feelings. Under each question there were probes listing various additional areas, situations, and directions to the initial question, so that the interviewer would get in-depth and diverse information about the question. This was helpful to the researcher as a constant check as to whether the interviewer asked all the right questions and the interviewee described without leaving any information unanswered. The interview guide & Initial-interview Questionnaire Appendix B. is found on p. 182.

Most of the participants were excited to share their life stories. When they talked about their life in Korea, they were more enthusiastic about sharing the details of their life in Korea compared to the details of their life in the United States. During the interview, some of them were deeply emotional. Compared with their life stories, some of them seemed less confident to talk about computers.

Computer Demonstration Session

After the pre-interview with participants, there were two small-group computer presentation sessions—one given at each site—for the participants with vicarious experience or no experience. The researcher conducted the sessions over a two-day period; each session lasted for approximately one hour. On the first day, the presenter explained exactly what a computer is and the functions of the computer such as the keyboard, the mouse, hardware and software, the microphone, camera, word processor, multimedia functions—music, picture, film—and of
course, the Internet and the World Wide Web (WWW). In the second session, the presenter explained and showed how to use the Internet to communicate with others. For example, the participants were shown how to obtain information, purchase goods on the Internet, send and receive emails, teleconference, and play games on the Web. For the presentation, a computer projector and a large wall screen were used, because there was no computer at the sites for the participants. To show them what the Internet is and how it works, an internet connection was established. The Computer Demonstration Session 1 & 2, Appendix C & D are found on p. 186 & 187.

The participants of the session were very excited with the computer presentation. They were interested in the functions of the computer with its various features such as pictures, emailing, sending pictures via email, teleconferencing, purchasing merchandise online, obtaining various information, reading and watching Korean newspapers, watching Korean soap operas (drama) and Korean movies, and word processing. They asked many questions to the presenter about computer functions and repeatedly asked for demonstrations of the various functions.

Post-Interview

After the computer presentation, seven participants were engaged in face-to-face post-interviews that lasted approximately one hour for each person. They were asked what benefits they felt from using the computer, how they felt about using the computer, and the reasons why they felt that way. The session also included a semi-structured questionnaire with probes such as those used in the pre-interview. In order to avoid confusion, the order of the post-interview with the samples followed the same order of the pre-interview. The Post-Interview Questionnaire Appendix E. is found on p.188.
Data Analysis

The data analysis was performed jointly with data collection from the initial stage to the end of the research. In terms of the data analysis method, two data coding methods were employed: open coding and axial coding.

First, open coding refers to the naming and categorizing of phenomenon through close examination of data. It was the basic analytical step for this study. The data were closely examined by comparing similarities and differences of words, sentences, and paragraphs, and then labeled with the conceptualized terms as descriptive terms that stand for or represent the phenomenon.

In this study, the raw data were sorted as words, sentences, and paragraphs for finding, discriminating, and developing meaningful relationships for theory building. Then the researcher labeled the data, capturing the meaning of them. For example, in the first data, several labels were formed such as vicarious computer experience, learning desire, and benefits of using the computer. To label the data, conceptual richness was required to stand for the condition, context, action/interaction, or consequences of the data regarding theory building.

Then the conceptual labels were grouped according to similarities and differences as categories. Categories refer to a classification of concepts. Concepts are compared against one another and appear to pertain to a similar phenomenon (Strauss & Corbin, 1990, p.61). For example, in this study, some labels—intellectual curiosity, being independent, SES level, emotional satisfaction, and benefits of using the computer—were grouped and named as “reasons for using the computer.” To name the category, the researcher had to choose the one that seemed most logically related to the data it represented and graphic enough to remind the researcher quickly of its referent (Strauss & Corbin, 1990, p.67).
While the researcher categorized the data, I recognized the whole picture of the data in terms of properties that can then be dimensionalized. Properties are the characteristics or attributes of a category and those dimensions represented locations of a property along a continuum (Strauss & Corbin, 1990, p.69). The researcher was then ready to correlate the relationships between categories and subcategories. In this study, one of the subcategories was ‘psychological reasons’ under the core category of ‘reasons of using the computer’. The following diagram might be helpful to explain a partial picture of the properties and dimensions of this study.

Table 1. Form of Properties

<table>
<thead>
<tr>
<th>Category</th>
<th>Properties</th>
<th>Dimensional range (applied to each incident)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons of using the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>computer</td>
<td>Intellectual curiosity</td>
<td>● wanting to know what he was curious—ignoring even though he has questions</td>
</tr>
<tr>
<td>Psychological reasons</td>
<td>Social recognition</td>
<td>● Co-worker’s appraisal,</td>
</tr>
<tr>
<td></td>
<td>Emotional satisfaction</td>
<td>● boss’s appraisal,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● recognition of own existence,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● self-satisfaction,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● happiness</td>
</tr>
</tbody>
</table>

In terms of second level data analysis, axial coding was applied to delineate the relationships of subcategories within a category.

In the axial coding, a phenomenon and its context are recognized. According to Strauss and Corbin (1990), the phenomenon refers to a central idea, an event, happening, or occasion with actions/interactions, while context refers to the specific set of properties that pertain to the phenomenon, that is, the location of events or incidents pertaining to a phenomenon along a dimensional range (p.100). For example, in this study, one of the recognized happenings was that older Korean-American adults dislike of using the computer is related to SES levels, English skills, health status, lack of time, educational background, and religious considerations. This
happening was described as a form of context that delineated a specific set of properties: intellectual curiosity, being independent, social recognition, and emotional satisfaction. Therefore, all the categories and subcategories provided explanations of the phenomenon through the finding of the process of the phenomenon, because the process explained the reason why the phenomenon occurred within the context. For example, one of the samples, Sun (78), said she did not use the computer “because it has anti-Christianity content and using it is waste of time. If I do the computer, I lose time to read and memorize the Bible.” Sun showed why she did not use computers, which showed the relationship or reasons that might differentiate the categories and subcategories. In this case, the researcher conceptualized ‘religious reason’ as a sub-category to explain the category ‘barriers of using computers’. Naturally, the subcategory explained why persons experienced the phenomenon, having negative attitudes toward the computer.

Various categories and subcategories were formed from the analysis of data and they were charted on a large piece of paper with the relationships among them also noted. The concept map was interpreted and analyzed in order to generate a theory to explain the relationships among the concepts within the phenomenon. During the process, interview notes and memos were used to capture the meaning of each piece of data, situation, concept, and procedure of the action and interaction that were closely related to the phenomenon. By adding the depth and structure of the categories and subcategories, the process developed as a systematical form of a substantive hypothesis to explain the phenomenon.

In the process of implementing the ground theory, the following processes of data collection, coding, and analysis occurred jointly; therefore, the researcher was required to be theoretically sensitive throughout the research. In the process of open and axial coding, it was
necessary to do both simultaneously, because the sampling was constant and the data analysis was needed throughout the entire process.

**Trustworthiness of This Study**

To ensure the trustworthiness of this study, I applied Constructivist framework: meaningfulness, transferability, dependability, and confirmability.

Table 2. Trustworthiness and Applied Method

<table>
<thead>
<tr>
<th>Meaningfulness</th>
<th>Transferability</th>
<th>Dependability</th>
<th>Confirmability</th>
</tr>
</thead>
<tbody>
<tr>
<td>← Thick Description →</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>← Prolonged engagement, Negative case analysis →</td>
<td></td>
<td></td>
<td>Reflective journal</td>
</tr>
</tbody>
</table>

In terms of meaningfulness, the researcher tries to ensure that the findings account for multiple constructions of this research participants.

In terms of transferability, the researcher tries to ensure that the information about the context and especially the participants of this study are sufficiently provided to the target audiences to ensure the relevance and applicability of the findings into other context.

Dependability refers to ensuring that the applied research instruments and procedures are sufficiently discriminating and discerning enough to detect differences and changes of the context.

In terms of confirmability, this research tires to ensure the transparent procedure from the starting point to final stage of this study. Thus it opens any chances of discussion or critics about this matter to target audiences.

To ensure meaningfulness, transferability, dependability, and confirmability of this study, this study adapted various methods.
First, the researcher used the method of thick description to ensure meaningfulness and transferability of this study. To analyze, show the evidence, examples, or supportive data, the researcher tried to use thick description of the data. For example, participants’ epistemological own descriptions of the situation or attitudes were fully added to show the evidence.

Secondly, to ensure meaningfulness, transferability, dependability, and confirmability, the researcher tried to prolonged engagement and negative case analysis. Thus the researcher tried to be sensitive to every moment dealing with the data.

Thirdly, to ensure the confirmability, the researcher used reflective journaling from the starting point to finish of this study.

Also, to ensure the collected data were clear description of the participants’, the researcher interviewed via telephone and face to face the director of the center. On the other hand, since the researcher didn’t have enough experience of research with grounded theory, he constantly engaged in discussion and got help from the academic advisor from the starting point of this study to the end of it.

**Limitations of the Study**

This study may have several limitations regarding the applied methods and personal experiences. First, a limitation is part of the nature of research design. To provide a holistic understanding of how older adults form their attitudes toward computers, the longitudinal method might be a more recommended method. However, this study adopted a cross-sectional method (Merriam & Simpson, 2000). Accordingly, the study did not focus on the change of older Korean American adults’ attitude toward computers, but rather their attitudes at the moment of the research.
Second, among data collection methods of the case study—interviews, document review, and observation—this study adopted only the first two methods. The observation method was not appropriate because the research sites— the Baltimore Christian Center for Older Korean Adults and Calvary Presbyterian Church—were not equipped with computer facilities.

Third, the researcher planned and performed the computer presentation. Therefore, the researcher could not observe the participants’ attitudes toward computers during the computer presentation. A better idea might have been to plan and to prepare the content of the computer presentation with others.

Fourth, there is a possible difficulty in interpretation from Korean to English because the words, idioms, and terms may not be the same in meaning in both languages. Since older Korean-American adults tend to use Korean idioms and rare words to describe their feelings, Pang (2000) reports the difficulties which follow from interpretation in English.

Two bilingual persons reviewed the interpreted data. Both are one and a half generation Korean Americans who migrated to the United States when they were nine and fifteen years old, respectively, and who were educated in the United States. One lives in New Jersey as a pastor and the other teaches ESL classes in an elementary school in New Jersey. They are confident with both languages and Korean and American customs, and therefore were well qualified to examine the quality of the interpretation of the data.
CHAPTER 4.

FINDINGS

The findings of this study were formed into a chart (4-1 Participants’ Attitudes Formation and Factors). As we see in the below figure, each part, participants’ computer use, consequences of computer use, attitudes, computer presentation & attitude change, socio-demographic factors & attitude formation, influenced participants’ attitude formation toward the computer.

Table 3. Participants’ Attitudes Formation and Factors

<table>
<thead>
<tr>
<th>Computer Use</th>
<th>Consequences of Computer Use</th>
<th>Attitudes</th>
<th>Socio-demographic Factors &amp; Attitude Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>Enthusiastic Abundant</td>
<td>Receptive Abundant</td>
<td>Perceived Factors Vs. Latent Factors</td>
</tr>
<tr>
<td>Harms</td>
<td>Adequate</td>
<td>Ambivalent Abundant</td>
<td>Age, SES</td>
</tr>
<tr>
<td></td>
<td>Insignificant</td>
<td>Unreceptive Abundant</td>
<td>Health condition, Types of Immigration</td>
</tr>
<tr>
<td></td>
<td>Counterproductive</td>
<td></td>
<td>Gender</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Computer Presentation &amp; Attitude Change</th>
<th>Consequences of Computer Use</th>
<th>Attitudes</th>
<th>Socio-demographic Factors &amp; Attitude Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upward</td>
<td>Enthusiastic Abundant</td>
<td>Receptive Abundant</td>
<td>Perceived Factors Vs. Latent Factors</td>
</tr>
<tr>
<td>Status Quo</td>
<td>Adequate</td>
<td>Ambivalent Abundant</td>
<td>Age, SES</td>
</tr>
<tr>
<td>Downward</td>
<td>Insignificant</td>
<td>Unreceptive Abundant</td>
<td>Health condition, Types of Immigration</td>
</tr>
<tr>
<td></td>
<td>Counterproductive</td>
<td></td>
<td>Gender</td>
</tr>
</tbody>
</table>

The findings of this study will be presented in the order of the four research questions: (a) What do participants describe as the consequences of their using the computer? (b) What attitudes toward the computer do participants describe and reveal? (c) How has direct exposure to information about its operations and uses affected inexperienced participants’ attitudes toward the
Consequences of Using the Computer

This section discusses participants’ actual use of the computer and the benefits and harms that participants perceived which were associated with using the computer.

Participants’ Computer Usage

Korean-American older adults used the computer for various means in their lives. The functions of computer use emerged into seven groups: a) communication tool b) gathering information c) having fun d) storing information e) developing self f) purchasing merchandise and g) helping others. First, participants’ major means for using the computer was as a communication tool such as emails (Kyong-76, Jong-85, Ae-70, Chae-67, Ae-70, Hae-66, Sam-75, & Jung-66), telephone (Jung-66, Seung-66, & Sam-75), teleconference (Jong-70, Jung-66, Sam-75, & Seung-66), and writing letters. Since the participants were immigrants, they kept in contact with many family members, relatives, and friends in Korea. Also, their family members who lived in the United States were living far away from them. Some participants (Jong-85, Chae-67, and Seung-66) complained about the geographic barriers among their family members who lived not only in Korea but also in the United States. For example, Jong (85) had eight children. Five of them lived in Korea and the other three lived in the United States. He knew that it was hard to meet his children who lived in Korea, but he was desperate that he also couldn’t meet with his children living in the United States. One son lived in Los Angeles running a grocery, a daughter ran a Korean restaurant in New York City, and a son ran a grocery in Baltimore. Though acknowledging that they might be very busy running their own businesses all day for seven days a week, he contended they should visit him when he was sick or missed them. He even mentioned
that “The United States changes the family values of Koreans. Immigrants don’t keep the valuable filial piety for their parents anymore, and I think here in the United States is not a good place to live. This is not a true life as a family.” The geographic barrier limited their meeting frequency and made them find alternative ways of communication such as teleconferencing. Therefore, they used the computer for the communication with their children via email, telephone, and teleconference. Most of them wanted to talk, see, and listen to their family members as much as possible. The telephone was convenient; however, its cost was prohibitive. So they wanted to save money by using the computer for communication with their family members, friends, and relatives mostly in Korea. After experiencing emailing and teleconferencing, they were fascinated that the functions of these were not as difficult as they had expected. Some participants felt lonely living in the United States having family members far away, so the presence of the computer which made it possible to communicate with family members gave them relief and satisfaction.

Second, the computer was used as a tool for gathering information. However, most participants couldn’t use the computer for searching for information, because this method was limited to participants who had a somewhat higher level of computer knowledge. For doing so, they had to be familiar with English regarding typing website addresses in English. They also needed a basic understanding about the websites, functions of the tool bars, and functions of the mouse. Participants who possessed basic computer skills tended to visit Korean websites because they were confident and felt comfortable reading and listening to their mother language, Korean. When they visited a website, they could spend as much time as they wanted, because there was an unlimited amount of information about anything they wanted. The content of the information was various and included health issues (Hae-66, Seung-66, Sam-75, and Jung-66), foods (Hae-66, and Ae-70), tourism (Sam-75), church- related issues (Sam-75, Seung-66, and Jung-66), Korean
novels (Sam-75), driving directions (Chae-67, and Jung-66), politics, economics, and social issues (Hae-66, Seung-66, Sam-75, Jung-66, Chae-67, and Hae-66). For example, one of the major issues was keeping in good health. They wanted to have a chance to counsel online about health problems, getting information about their own or their friends’ health issues. Some of the more energetic participants (Sam-75, Jung-66, and Seung-66) filed useful health information and sent or distributed it to their friends. Regarding information about food, participants didn’t focus on delicious or new foods, but rather searched for healthy foods for sustaining their physical health. They also searched for information about domestic tourism. They searched numerous sites and places, and would choose the place which best met their budget and their wants. In this aspect, they were no longer passive consumers. They tended to use Korean travel agencies and chose packaged tours for two to three days’ stay.

In the Korean immigrant society, older adults’ Christian faith played an important role not only for each person, but also for the community. Their value of life was strongly bonded to the practice of Christianity. So their Christian faith also influenced at this point the use of the computer for religious means. They visited their church website to listen to hymns, Christian music, and pastors’ sermons, engaging in counseling and communicating with church members. The computer was also used for reading Korean novels and getting information about interesting writers. The computer was heavily used for reading newspapers in numerous areas such as politics, economics, and social issues.

Third, participants used the computer as a tool for having fun, for activities such as watching soap operas (Hae-66, Ae-70, and Seung-66) and entertainment programs (Hae-66, and Ae-70), playing games (Hae-66, Jong-85, and Ok-80), listening to music (Sam-75, Seung-66, Jung-66, Kyong-76), and viewing family photos (Seung-66, Sam-75, Jung-66, Chae-67, Hae-66,
Ae-70, and Kyong-76). Lots of Korean older adults reported enjoying Korean soap operas online because they were fascinating and interesting. Watching soap operas online was popular in Korean American society and it was sensational among the older adults as well. Various entertainment programs were online so they could fill immigrants’ nostalgia with old folk music. Older adults frequently played computer games too. They played Korean card games, Western card games, and relatively easy games such as car racing, solitaire, or matching numbers. Those games gave them enjoyment and were an easy way to kill time. For family members dwelling remotely, the computer was used as a picture album. They turned on the computer to view their family members’ digital photos when they wanted. When grandchildren visited their grandparents’ home, they usually arranged those photos and updated them.

Fourth, participants used the computer for the storage of information or data for personal use. Most of the participants (Sam-75, Seung-66, Jung-66, Hae-66, and Ae-70) who used the word processor thought that storage of information on the computer was the major function of using the computer. Sam, Seung, and Jung used the Word Processor for professional reasons such as writing papers, documents, sermons, or letters. They also stored information which they gathered from the websites. For example, Sam (75) did surf the web almost everyday. When he got any important or needed information not only for himself but also for others, he would save the information for later use.

Also, Hae (66) used a word processor for arranging her own information and storing them for later use. She was interested in information about health issues and healthy foods. When she came across relevant information, she copied and pasted it in her computer for later viewing. She also searched the web to know about health-related information such as names of diseases, medicines, prevention methods, and appropriate foods. When she visited her doctor’s office, she
would take the information that she had printed out to the doctor for better communication. For this purpose, she was relieved when she saved information about what she wanted on the computer. Other participants (Seung-66, Sam-75, Jung-66, Chae-67, and Ae-70) also used the computer for storage of useful information for later use. The contents were various because some of them were still working as professionals.

Fifth, participants who were professionals used the computer for personal development. Professionals had learned required computer skills and software such as Microsoft Excel (Sam-75, Seung-66, and Jung-66), Microsoft Publisher (Seung-66 and Jung-66), Microsoft Word (Seung-66, Sam-75, Jung-66, Chae-67, and Ae-70), Microsoft PowerPoint (Seung-66, Sam-75, Jung-66, Chae-67, and Ae-70), and Web design software (Seung-66 and Sam-75). They learned certain software for career-related reasons and personal interest. For example, Sam (75) and Seung (66) used the computer for learning about leadership. Sam was a retired pastor but he still worked for a church and various Christian associations. However, Seung became a pastor after he retired as a CPA. For him, his new job as a pastor was a challenge even though he believed that he was called by God. He wanted to learn about how to manage a church and its members. He constantly searched for information about how to communicate with church members, how to manage the church website, and how to develop plans for the church itself. Both of them, Sam and Seung, learned various software such as Microsoft Front Page, Microsoft Publisher, and Microsoft PowerPoint. Sam and Seung reported that they didn’t expect to utilize software for church management, but acknowledged that it was necessary in modern days. They said that the computer had useful information not only for the young Christians but also middle and older adults too. They were excited to experience trials and errors in what they learned. From the experience, they learned how to educate church leaders and laypersons for building a faithful Christian community.
and how to use various computer software for church management. They also noted that now they couldn’t imagine managing a church without the computer because it was such a powerful tool for communication. They concluded that the success of their church management depended on the way of using the computer.

Sixth, the computer was used as a tool for purchasing merchandise. For the Korean society, online shopping was a popular trend not only for the young generation but also for the middle and old generations. Participants of this study also were consumers of online shopping. Since the Koreans consisted of a minority ethnic group in the United States and were geographically scattered, their commercial boundary was not convenient enough for them to physically visit Korean shops to buy traditional Korean items. So the online shops were a very helpful and convenient way for them to order and receive goods without making a long journey to ethnic markets. Seung (66), Sam (75), Jung (66), and Ae (70) were the online shoppers who really enjoyed this process because they could purchase specific items which they couldn’t get from the big market near their home. Sometimes the online price was cheaper than the market price, so they were more satisfied with it. However, sometimes it took several days to receive the item. They did say that the wait was reasonable and they could wait for those days. Moreover, because of some physical disabilities common to aging, online shopping was beneficial for older adults. From this point of view, online shopping seemed beneficial for older adults with their development of physical disabilities.

Seventh, participants used the computer for helping others. Since they were an ethnic minority, they had major problems such as language barriers, cultural gaps with the dominant society, security problems, and loneliness. It depends on individual differences, but most of them tended to share those difficulties. Participants who had computer skills often shared information or
beneficial resources with other Korean-American older adults on topics such as health, public policies, information about the motherland, community information, resources about Christianity, travel, or hobbies. In terms of the language barrier, most of the Korean-American older adults didn’t have sufficient enough English skills to read, write, and talk in English. As one aspect, Hae (66) said that “When the senior apartment has an announcement for everyone who lives in the apartment, they put it on the bulletin board in the lobby. The contents are about having a party, security checks, renewing contracts, or so. However, most of the Korean older adults cannot understand what the content is because they cannot read English. Once I recognized it, I went to the office and volunteered to interpret the announcement and type it into Korean. Then I put the Korean version of the announcement on the bulletin board and other Korean older adults could understand it. I know that when the announcement is written in English, Korean older adults cannot read it. Even when they have a party for everyone in the apartment, Korean older adults don’t participate because of the simple English problem. Since then, I have worked for the bulletin board as a volunteer for the Korean older adults. And I am really happy to serve them with this small help. Sometimes, I feel that I’m alive doing something for others.” In the personal perspective, some participants (Seung-66, Sam-75, and Jung-66) collected useful information for other Korean older adults or friends from the website and printed them out to distribute to the persons who needed it. They were satisfied with the work, helping others, in their small endeavor but also brought a very useful effect to older adults’ actual lives.

Benefits Associated with Using the Computer

In terms of types of benefits from using the computer, four modes were captured: a) convenience b) economical benefit c) social recognition and d) psychological satisfaction with use of the computer. With regard to convenience, participants contended that the computer was a
convenient tool for gathering and acquiring information (Seung-66) and documenting because it was a tool for information storage and delivery. For example, they could have access to abundant information whenever they wanted. Participants said that the computer was convenient because they could watch Korean news programs anytime and get plenty of information about Korea and the United States (Seung-66, Sam-75, Jung-66, Keum-65, and Sun-78) in diverse areas. Seung said that the computer was amazingly useful for gathering and acquiring information. But in his understanding, the computer was recognized as having only limited functions. He recognized the computer as only a machine, something that was not creative like a human being. Therefore, he emphasized that the computer was a mere object which had to be operated by a human being.

Also, Sam (75) and Jung (66) insisted that the computer was a convenient tool for sharing information with others. Sam was a pastor and an associate executive of Pan Korean American Ministry in the Seniors of Northeast. When he managed the association, he had to write journals and emails almost every day and send/receive emails to the members of the association. He shared lots of information with other members to help them better manage the association as well.

In specific, Hae (66) said that the computer was convenient because it made it possible for her to keep records in the area of medicine. She also reported that the computer enabled her to help others who couldn’t communicate in English. Finally, Sam (75) said that their minds and perspectives about the world became wider after using the computer, not only in the professional area, but also with regard to personal interests.

There were participants who said that computers were convenient because of the function of word processing. Ae (70) used the computer for typing. She had written lots of letters to family members and friends who had been living in Korea. She discovered that the computer was easier by way of typing than hand writing. She said that “tapping the key board of the
computer actually was easier than writing by hand.” Another participant, Jae (72) also was a heavy writer for a ministry reason. He had several ministry trips to China and other countries and had to keep in touch with people he met there. Writing letters was a very important part of his daily life that gave his life stronger meaning. However, as he was getting older, his health condition was getting worse, including having chest aches, numb hands, muscle aches, and sore eyes. Then he couldn’t write by hand as often as he did before. At that moment, he became aware of the computer as a tool for easier written communication. It seemed to be a better alternative way of writing letters than writing by hand.

Secondly, the computer use brought economical benefits such as saving money and financial compensation. For example, Keum (66) and Jung (66) emphasized that using the computer might save money. One day Jung had to renew his passport to travel abroad. To renew it, he usually had to visit the Korean Embassy at Washington, D.C. in person. It took usually one and a half hours. However, if he used the computer, he could visit the Embassy Website simply at home and apply for passport renewal. If he visited the office, it also resulted in increased cost for gasoline. Therefore, he said that it was simple and economically beneficial to renew the passport online. Moreover, he said that he didn’t need to visit malls to buy merchandise at the best price, because he could surf the various websites to compare price and quality of the goods. From his experience, most of the online prices were cheaper than standard store prices even on ethnic merchandise. He concluded that the computer was very beneficial for saving money.

In Keum’s (66) case, she was excited about saving money by using the computer for buying merchandise. For instance, she could save much money purchasing airline tickets online instead of off-line. When her son bought airline tickets for her, he didn’t spend much money visiting or making phone calls to travel agencies comparing airfares. Instead, he could simply
visit numerous websites of travel agencies and compare the airfares for the best price. She contended that the price was far cheaper than the off-line price, thus she could save money buying tickets online. Also, to buy Korean ethnic food, she had to go a Korean supermarket a one hour’s distance from her house. If she ordered food online, she could save much money. Normally, online prices were cheaper than the supermarket price. This was one of the reasons why she became to have affective attitude toward the computer.

As an outstanding example of economical compensation from computer use, Seung (66) not only was promoted but was also paid higher payment than other co-workers because of his more advanced computer skills and knowledge. Also, he kept working for the company as a consultant with a high salary even after his retirement. He had never expected to earn money after he was retired because he had no opportunities like that. In actual life, he started to ministry spending lots of money without any income. Therefore, when he was asked to be a consultant by the company, he thought that he was blessed by God because of his computer skills.

Thirdly, in terms of social perspective, the computer was beneficial for participants to be socially recognized because of their skills and knowledge about the computer. Seung (66) experienced social recognition by others at the workplace because he was faster than others in learning computer skills and also was a better problem solver than others. In his department, he was a minority as an Asian, and was not able to be a leader at any case. However, his work started to use computer software that was made for the management of statistics in the work area. Among the workers, he was an outstandingly fast learner and applier. After that, he began to teach other workers some computer skills, and could solve hard cases those other co-workers could not. He said that his ability was recognized by the boss and co-workers and compensated with promotions and higher payment. He was so proud of himself about being recognized by his
ability despite his status as a minority. After his retirement, the company tried to convert the
account software to a new one, but there were problems nobody in the department could solve.
Therefore, he was asked to be a high-salaried consultant once a week and he ended up consulting
the company for five years. From the experience of social recognition, he became confident in
his work area and enjoyed working. The social recognition was very meaningful for his life as an
immigrant because he was the only Asian in his work environment. Computer skills became his
backbone for him to survive in the United States as a minority.

Fourthly, the computer use brought psychological satisfaction to the older adults and
seemed one of the very important consequences for the older adults. The most important aspect
was gaining tranquility from the computer. The computer was recognized as the tool of direct
communication with children who were both subjects of concern and caregivers of the older
adults. Since they were immigrants in the United States, their zone of life was very limited
compared with natives. The pressure of the language barrier often bounded them to a home-
based-life-style or their ethnic community. If they had physical difficulties to travel, it became
worse to isolate them from the major society. Therefore, they needed relief from the prosaic
lifestyle, and the computer undertook the role. The teleconference software, MSN and other
websites, allowed the adults to talk and see each others’ faces easily whenever they logged onto
the computer. Seung (66), Sam (75), and Jung (66) used the teleconference for that reason. On
the other hand, it was a relief for the older adults to sit in front of the computer and use it. For
example, Hae (66) disliked to engage in group activities with others at the adult daycare center.
The center had whole-day programs for the attendants such as recreation, music, dance, watching
movies, and more. However, she identified herself as having an introverted personality and
disliked social activities with others. Being with others who engaged in noisy conversation or
music was an unappealing situation for her, so she often found herself sitting in front of the computer. Surfing the Internet and using interesting programs led her to quiet and cozy atmospheres that she enjoyed.

Because advanced age often brings loss of memory ability, the computer was recognized as a tool to assist participants’ memory. For example, Hae (66), and Sam (75) felt safe when they saved information in the computer. Hae usually kept records about health management and diet methods which she got from websites or other people. After they became aware of the process of memory loss, they wanted to keep records to use them later. Word processors were an important part for them to depend on. Also, the teleconferencing and emailing system gave participants (Seung-66, Sam-75, Jung-66, and Hae-66) safety because they could easily communicate with their children whenever they wanted.

The computer was considered as a tool which gave self-confidence. For example, Hae (66) aimed to learn some kinds of software, and when she accomplished the goal, she felt self-confidence and excitement. When she was working for a senior center, she couldn’t do word processing at all. The director gave her heavy work that she couldn’t handle with handwriting. So she needed to learn word processing to manage her work. She set up goals of learning, such as typing, copying, deleting, saving, or printing documents on the computer. When she accomplished these goals, she was excited. She reported that there were no other meaningful learning goals in her late life other than the computer, which gave her the chance to set goals to accomplish. Moreover, the computer challenged both his mind and world view. The computer was full of various information that comprised of many levels of difficulties. For example, the civilians could understand general news content, but if the news was specific and professional, such as about cloning in the area of bio-technology, he surfed on the Internet to learn about it.
When he was engaged in those activities, he strongly felt that the computer widened his mind and worldview.

Harms Associated with Using the Computer

Harms associated with using the computer were defined as any problematic results which might be caused by using the computer and affect the participants. The computer was recognized as not only beneficial but also harmful in participants’ understanding. The harms were grouped as three modes: physical discomforts, unfriendliness with others, and disrupting the priority of daily activity.

First, in terms of physical discomforts, older adults (Bok-85, Jong-85, Kyong-76, Hae-66, and Un-78) considered their physical health condition as the most important one that directly affected their life and death. Thus they had been trying to sustain their health condition and they were very sensitive about their physical changes. Participants who belonged to this group tended to consider any physical discomforts from using the computer as serious problems. Moreover, participants who experienced physical discomforts tended to discontinue using the computer. Kyong (76), Jong (85), and Seung (66) complained that the computer use caused physical discomforts such as sore eyes, headaches, dizziness, muscle aches, and numbness of the body. Participants complained that the icons were too small for them to click on, the keyboard was too sensitive to type in with their unskillful hand motion, the mouse was too sensitive to select options, the size of letters on the screen was too small to read, and the whole body became stiffened when operating the computer. When they started to use the computer, they never expected those drawbacks because they didn’t have any information or any previous notice about those potential problems. Since they considered physical health as the most important issue in their late life, such experience of discomfort led them to quit using the computer. If they felt that they could tolerate
the difficulties, they would keep using the computer. Also, if they had any obligations to use it, they might keep on using it (Kyoung-76).

Jong contended that the issue of physical health was the major one for him. He had several surgeries at that time and suffered from heart and leg problems. He had to carry an oxygen tank and also used an electric wheelchair. Without these, he couldn’t move or breathe. He complained about physical disabilities that he had never expected. He was very desperate to sustain his health and recover from problems. He even said that he was just waiting for death.

Secondly, computer use caused unfriendliness with others. In terms of social perspective, participants had limited and narrow social boundaries focusing on family members and people in the senior center. Therefore, the relationships with family and friends were considered very important and meaningful for their lives. However, computer use sometimes caused a problem regarding relationships with others. For example, Sun (78) complained that computer use disrupted social ties among the family members. Her grandchildren used to be very friendly and tended to spend much time with family members, including her, when they were together at home. However, after they were introduced to the computer, they just sat in front of it and wasted much time playing games, chatting, and surfing the Internet without talking with family members. She said that “after my grandchildren learned how to use the computer, they didn’t engage in communication with family members as much as they did before. So there was no talking among us and our family suddenly became quiet, so quiet. The computer made our family members not engage in communication as much as before.” From the experience, she felt sorry that the computer made her family less connected than before.

Moreover, Sun (78) and Yem (71) complained that the computer caused a negative relationship between them and their grandchildren because grandchildren blamed them about their
not having computer skills. An important role of participants was taking care of their grandchildren whose mom and dad were working during the daytime. They believed that the relationship with the grandchildren was very tight before it happened. One day, Sun’s grandchildren accused her of not having basic computer skills. Moreover, when Yem asked to her grandchildren to teach her some computer skills, they rejected the idea. It hurt both of them very much, resulting in unfriendly relationships with their grandchildren. Now she hardly talked to them about any issues.

As a positive case, Kyong (76) experienced that the relationship with her and her grandchild became friendlier and tighter than before after working on the computer together. At first, when she couldn’t use the computer, her grandchildren spent time by themselves using it. One day, her grandchild asked her to tap keys on the computer keyboard to play music, watch family pictures, and surf websites. He let her listen to Korean folk music on the Internet and she was surprised not only by the various kinds of it but also the amount of it. He also showed Kyung family photos on the computer, and it was fascinating for her to watch. She didn’t know that the computer could store numerous and good quality pictures without heavy albums. Later, he showed how to surf the Internet to find Korean folk music. Those encounters encouraged her to learn the computer. Later she could play games with her grandchildren and had fun. She believed that the relationship with her grandchildren became friendlier and closer than before.

On the other hand, a participant experienced unfriendliness with staff at the senior center because of the computer. For example, Hae (66) recognized a power struggle between the staff and residents of the senior center. Most of the staff had better computer skills than residents, and the staff seemed to monopolize the computer while not teaching participants how to use it. Hae thought that the staff might feel superiority from having computer skills, and the participants felt a
sense of inferiority toward the staff because of this. The easily recognizable ability was the computer skills at the center because most of the participants didn’t have high computer skills when compared to the staff. In Hae’s observation, the staff members tended to possess the computer skills without teaching these skills to participants of the center. Including Hae, many participants asked the staff to teach basic computer skills, but the staff rejected this idea. So the participants became dependent on asking staff members for help when they had something to do on the computer such as sending emails, typing letters, or surfing the Internet. However, staff didn’t teach how to operate the computer; rather, they only did what older adults needed for them. Moreover, when participants asked staff to teach the skills, they were apt to overreact and say that “You don’t need to learn it. Just ask staff when you need something!” Then the participants became subordinated to the staff. This caused them to be unfriendly regarding computer issues.

Thirdly, disrupting the priority of daily activity was a recognized harm of computer use. After participants began using the computer, they experienced unexpected time management such as spending too much time engaged with the computer. Before using the computer, they had other activities for their daily lives such as reading the Bible (Sam-75), spending time with friends (Hae-66), spending time with family members (Ok-80), and exercise (Sam-75 and Jung-66). However, after using the computer, they tended to spend more time with the computer because it was fun. They told that playing games and surfing the Internet made them forget the time passing so the computer rearranged their priority of daily activities. For example, Hae (66) tended to spend time with friends and others when she had free time. But she said that “After I learned the computer, I wanted to be alone because it was more comfortable than being with others. I know that the computer is not a good thing to spend much time on and neglect other things. But I don’t know. I just find myself sitting in front of the computer and using it. So I think that my priority of daily
activities has been changed from spending time with friends to using the computer. But I’m ok about it.”

As a negative case, Sun’s (78) major activity of her priority of life was the practice of Christianity by reading and memorizing the verses of the Bible. To keep the priority, she decided not to use the computer anymore. She spent several hours reading and memorizing Bible verses everyday. She said that “I know that the computer is good for older adults. There are some friends here in the senior center who use the computer. They seem to have fun with it. And I know it must be good to learn and use it. However, I decided not to learn and use it because if I do it, I cannot do important things. For me, reading and memorizing the Bible verses was the most important aspect of my daily life. I cannot imagine my life without this, because I have kept doing it from my middle adulthood. For example, I know that the Korean soap operas are very interesting and fun. Most of my friends watch these videos almost everyday. However, if I spend time watching videos, I lose the time to read and memorize the Bible. It must be true because my physical health is not good to do both simultaneously. I have to choose one. So I didn’t watch the Korean videos. Nor do I do the computer. I know that the computer was fun to do and good for killing time. However, it is the same as watching Korean videos. I must spend lots of time reading and memorizing the verses of the Bible. Thus, I decided not to use the computer.”

In Jong’s (85) case, he enjoyed using the computer. However, his priority of life was changed to keeping in optimal health, and he decided to quit using the computer. He had several surgeries and experienced dramatic declining of his health. The priority of life was very personal, but it seemed very important for participants to sustain what they picture as their lifestyle. The computer was one factor that caused disruption of the priority of daily activities for older adults.
**Perceived Consequences of the Computer Use**

The perceived consequences of computer use referred to actual or perceptual consequences of computer use that participants recognized. In consequences of the computer use, four subgroups were identified: a) abundant b) adequate c) insignificant and d) counterproductive.

The first group, *abundant consequences*, was defined as the participants who thought that the computer had various and numerous effective benefits in large quantities and qualities for older adults. Participants who belonged this group (Seung-66, Sam-75, Jung-66, and Hae-66) actually used the computer as a powerful tool for communication, gathering information, having fun, storing information, developing self, purchasing merchandise, and helping others. Most of them used the computer at least four times a week for more than two hours per day.

They also experienced all the benefits of using the computer such as convenience, economical benefits, social recognition, and psychological satisfaction. The details were shown above in the exact section. In terms of harms of computer use, many participants had experienced physical discomforts such as headaches and muscle aches.

Participants who were in this group had very specific and in-depth acknowledgement of computer use. They had used the computer for career development and job-related purposes. For example, Seung (66) used the computer as a government accountant, CPA; Jung (66) used it for his work as a professor in chemical engineering; and Won (70) used the computer as an engineer. Moreover, Won wanted to use the computer for business management, developing a data base for himself for his own business.

Their knowledge and experience with computers was in-depth, and the experience was various, from job-related to personal use. For these participants, word-processing was the prerequisite function of the computer for writing, recording, saving, and communicating with
others. For example, Hae (66) used the word processor as an assistant director of a Korean senior center for a long time. Specifically, she used it for helping others by interpreting and announcing information to other Korean older adults. And so did Sam (75). Sam designated the computer as a tool for sharing information with others.

They also heavily used the Internet for gathering information (Seung-66, Hae-66, Sam-75, Jung-66, and Sun-78). In Seung’s case, he collected various information about Christianity, ethics, and social issues for preparation of his sermon. The internet was a fascinating tool for not only one-way information delivery, but also two-way delivery, giving and taking information with anonymous others (Sam-75).

Emailing was a top priority of using the computer for everyone (Hae-66, Keum-65, Sam-75, Jung-66, and Sun-78). Major communicators were co-workers and acquaintances as well as family members, while other groups such as adequate, insignificant, and counterproductive groups emphasized only family members to communicate. Since they were immigrants who had family members or relatives in Korea, they wanted to talk more with them and also save money. Moreover, they used teleconference with family members at a regular basis, talking and seeing each others’ faces at the same time. It was recognized as a useful tool to show older adults’ exact situations in terms of health and economy because the screen clearly showed both the other’s vivid facial expressions and made it possible to infer the other’s holistic situation through the screen. They also sent and received pictures through email (Keum-65, Seung-66, Sam-75, and Hae-66). For example, Keum (66) had a daughter living in San Diego who had a newborn baby. Keum and her daughter were excited to send and receive the baby’s pictures through email since they were geographically apart.
Also they used the computer for faxing documents (Sam-75), listening to music (Jung-66), watching news (Sam-75, Seung-66, and Hae-66), buying merchandise such as airline tickets, watching movies, reading novels, and playing games. Moreover, they used the computer to help others interpret announcements and gathering and giving useful information to Korean older adults. Participants who belonged to this group acknowledged that the consequences to the computer use were beneficial and abundant.

The second group, adequate consequences, was defined as participants who thought that the computer had sufficient, satisfactory, or proportionate consequences for the participant to use and get. However, the participants’ perceptual and actual consequences of the computer were limited to the basic level of their computer skills and functions. Six (Chae-67, Ok-80, Ae-70, Un-78, Jae-72, and Yem-71) participants belonged to this group. Like the abundant consequences group, the adequate consequences group also used the computer as a communication tool with family members. Ae (70), Chae (65), Yem (71), and Jae (72) thought that the major usage of the computer was communication with others (emailing, sending pictures, and teleconferencing with family members). Not all of them had a chance to learn and use the computer from work-related reasons, but they knew about the computer from personal interest in it. For example, Ae (70) started to learn to use the computer when she felt the need to use it for typing. She had written lots of letters to family members and friends who lived in Korea. She found out that the computer word processor was an easier way of typing than handwriting. She said that “Tapping the key board of the computer actually was easier than writing letters.” Another participant, Jae (72), also was a heavy writer for ministry reasons. He had several ministry trips to China and other countries and had to keep in touch with the people he met there. Writing letters was a very important part of his daily life that gave his later life meaning. However, as he was getting older,
his health condition was getting worse, having chest pains, numb hands, muscle aches, and sore eyes. He couldn’t write by hand as often as he did before. At that moment, he became aware of the computer as a method of writing letters. It seemed a better alternative way of writing letters than by hand.

To most of the participants, the Internet gave various types of uses like the abundant consequences group, such as gathering information (Un-78, Ok-80, and Chae-67), buying merchandise (Chae-67), gaming (Yem-71 and Ok-80), and having fun (Chae-67 and Ok-80).

Gathering information was the major reason for computer use for the adequate consequences group as well. For example, Chae started to use the computer with a goal-oriented reason. He was asked to write a report about the history of his church for a publication. The entire record was in a computer diskette format that he couldn’t handle. So he learned the basic skills of word processing and finished the project. The experience gave him the ambition to learn more computer skills and the knowledge to fulfill his intellectual curiosity. He was a heavy book reader since his young adulthood. Until this time, he had been reading at least two books a week because of his intellectual curiosity. His reading habits might have begun by the want of compensation for his loss of everything, parents, wealth, and learning opportunities. He was born in a very wealthy family, but his father and mother died before he was ten years old. His parents’ sudden death brought him tragic results, such as distributing the family’s entire wealth to uncles, and finally Chae was thrown to the street. He had lived by himself without any help from relatives. From the experience, he started to read books and it was the only way of getting comfort from an unacceptable situation. He said that, “When the world was hard for me and when I was depressed by the environment, I picked up a book and read it. Then several minutes later, I found myself as a relaxed, peaceful, and happy minded human being. I could forget the
hectic world around me. I liked all kinds of books because they gave me the way to hide myself from the terrible world. And I became free. Mostly, I could learn whatever I wanted from the books. For me, books are the teachers who teach me anytime at any moment.” Even though he was very busy running a laundry six days a week, he always picked books and read them at any moment he could. His means of escaping a difficult reality by reading books was replaced by using the computer when he became an older adult. So his major usage of the computer was getting information which was boundless, unfixed, and opened to any subject which filled his intellectual curiosity. Recently, his areas of interest were the history of Korea and Christianity.

Participants used the computer for reading newspapers. Since they had language barriers, they couldn’t understand the English based broadcasting or news media. Chae (67) said that he felt uncomfortable many times when he couldn’t understand English news which he thought was very important. So he needed Korean language based information which Korean websites provided. They could learn news not only about Korea, but also about the United States through the Korean websites. Chae (67) and Yem (71) wanted up-to-the-minute Korean news, and the computer made it possible. So they wanted to read the Korean newspaper online.

The Internet was used as a tool for getting driving directions and travel information. Chae (67) did not travel a lot because of lack of time. As a result, he was not familiar with his home area of Baltimore and surrounding areas. He had found himself worrying about driving to unfamiliar places. After learning about the computer, he could get driving directions from a map service and he was satisfied with it. Now he didn’t worry about driving directions anymore. Also, he had used travel-related websites for getting travel information and deciding on a place to vacation. For example, when he wanted to spend several days in Mexico with his wife on a summer vacation, he gathered lots of information from relevant websites and decided places and
activities which he and his wife wanted to do. Then he called a travel agency to book airline
tickets. It was his first time to decide on travel places that he wanted to visit. So, he was satisfied
with the whole vacation because it was done on his choice; moreover, he felt that he became
younger and more confident with regard to managing his life. As we could see from the case,
using the Internet was not merely getting driving directions or travel information, but it gave
participants self-confidence and a sense of freedom too.

The computer was easily considered as a tool for games. Yem (71) and Ok (80) saw
their grandchildren, daughters, and friends playing computer games and they seemed to have fun.
Yem was a highly educated female who was confident about herself. However, after she
immigrated to the United States, she became isolated from the society and the world she wanted
to belong to. She was a teacher in Korea who had a vision about the motherland and herself. She
was passionate about her children’s education, and they were successful students at school.
However, in the United States, she became a home-bound person even though she worked for a
sewing company for many years. She couldn’t find any friends in her new company because of
the language barrier and cultural differences. Her children couldn’t keep their planed education
because of financial difficulties. As a result, she said that her immigration was successful for her
children, but not at all for herself. She regretted leaving Korea and became helpless. At home,
her husband had been an authoritarian and she was subordinated her whole life. One day, she
realized that the computer might be a useful tool for her. She saw her daughters and
grandchildren using the computer and having fun. Also, her friends in the church encouraged her
to learn and use the computer. When she asked her granddaughter to teach her, her
granddaughter refused, saying that “Grandma, I cannot teach you since you are not good at
English. The computer runs by English so if you cannot spell correctly, you cannot learn the
computer.” She was disappointed about this reaction, but still wanted to learn and use it for
simple tasks such as games. Computer gaming didn’t mean just having fun or spending time, but
it meant for her to be independent and free from others, and time to be herself.

In Ok’s (80) case, she used computer games for similar reasons as Yem. Ok said that she
was the loneliest person in the world because she had only a daughter in the United States
without any relatives. She was a single mother of a daughter and was also poor in Korea. After
her daughter got married to a non-Korean, all the relatives turned their backs on them because
the marriage was a taboo. They came to the United States and her daughter did her best in her
work area. She learned English and computer skills, and worked hard to be confident in her work
area as a minority. Later, her computer skills and problem-solving abilities were recognized by
her boss and co-workers. Therefore, she was picked as the best employee and got promotions
with high wages. Ok and her daughter believed that the results came from her wonderful
computer skills and endeavor of learning. So, Ok became to admire the computer and started to
learn it from her grandchildren and daughter. To Ok, an uneducated person, the computer
seemed a powerful tool which helped a powerless minority girl succeed in her work area.
Computer games were considered as valuable activities for her to spend time.

Participants considered the computer as a means of having fun. For example, Ok (80)
thought that the computer was fun because a certain computer function or program brought
excitement and enjoyment to the users. Ok was a heavy computer gamer who used the computer
mainly for games. When she was involved in a computer game, she was excited and felt free
from her tangled life situation. The game was fascinating to be engaged in, and when she won,
she felt extreme joy that she could not feel from other situations. She would play card games,
Western and Korean cards, and car racing.
In terms of types of benefits from using the computer, the computer brought convenience to the users, such as easier typing with a keyboard than handwriting (Jae-72). The result was prettier, and editing was possible (Ae-70). Uniquely, participants’ observations of the benefits were limited to word processing, and this could be understood because they had no opportunity to use the computer for vocation-related reasons. Ae and Jae were heavy letter writers and they acknowledged the functions of the word processor. For them, the editing function and fonts were convenient to writing letters. On the other hand, Ok (80) said that the computer was a convenient tool for spending time because it was fun. In her case, she had fun playing computer games.

Secondly, participants recognized some economic benefits. Ae (70) used to write and exchange letters with family members, relatives in Korea, and relatives in the United States. She said that “Sending and receiving emails saves lots of money compared to sending mail via the post office.”

Thirdly, the adequate consequences group added the social recognition and compensations from the computer use. Ok (80) shared her daughter’s experience as a minority woman in her work area. Her better computer skills, compared to her co-workers, made it possible for her to be a better problem solver among the co-workers. Then she was recognized as the best worker in her department by her bosses and co-workers. She was promoted with high payment. She also thought that her computer skills and knowledge brought her social recognition and it made it possible for her to succeed in the workplace.

Fourthly, participants recognized the psychological satisfaction from use of the computer. For example, Ok (80) expressed that she had been using the computer because she felt good. She also felt the accomplishment when she was able to learn and master certain computer
software or skills. She was born in a humble agricultural area in Korea and never had a chance to attend school. Her parents thought that education was only for males, so they didn’t let her go to the local free night school. She had helped her family with chores until she got married. After the marriage, she was only a housewife. She regretted not gaining any school experience and envied others’ going to school. She said that she was excited to learn something. Moreover, when she made a goal in learning or computing, her mind was full of joy. She was happy that she felt a triumph even in her late age. Learning the computer was her most meaningful activity.

The third group, insignificant consequences, was defined as the participants who perceived that the computer had unimportant, insignificant, and meaningless consequences. Therefore, participants might think that the computer was incapable of proper functioning because it didn’t fulfill a needed requirement. Only one participant belonged to this group. Bok (85) thought that the computer was inappropriate for older adults because of barriers such as lack of memory ability, bad health conditions, and no previous experience with the computer. However, she recognized several types of benefits of computer use, such as a tool for communication with children, teleconferencing, ministry, gathering information, and studying. She thought that the computer might be helpful to talk with children in Korea because they could see and talk on its screen. However, because she was living alone, Bok was not sure that she could learn to use the computer by herself. As a faithful Christian, she thought that the computer might be a good method of ministry. As a dedicated, she thought that the computer was good for young people and it might be beneficial for youths for study purposes.

In terms of types of computer use, she still had limited understanding about the computer. She might not want to apply the various uses of the computer to older adults because she concluded that the computer was inappropriate for older adults. She named two examples of
computer use as gathering information and buying merchandise. Bok wanted to listen to Korean news and gather information about health issues. Her major concern was health matters because she had recently experienced some dramatic health changes. She easily felt dizziness, numbness of the right arm, sore eyes, and chest pains. So she wanted to know how to manage her health problems from the computer. She said that if she could use the computer, she would use it to buy merchandise in order not to bother her daughter’s family. Her youngest daughter lived in Baltimore and was her major caregiver. Bok was strongly dependant on her, and she was a working woman. Bok knew that she might be very busy with her work and family. Bok wanted to lessen her daughter’s burden by learning to use the computer. Her one need seemed to be to use it to buy merchandise whenever she needed. However, Bok concluded that the computer was not significant for her life and it was beyond her ability to use it.

The fourth group, *counterproductive consequences*, was defined as the participants who thought that the computer tended to hinder the achievement of a goal or produce the opposite of the desired effect. Most of the computer users had certain purposes or goals for computer use, but there might be participants who experienced unexpected or unwelcome outcomes or results. It could be derived from malfunctions or side effects of the computer or computer users’ ignorance of the computer. Those participants belonged to this group.

Two participants (Kyong-76 and Jong-85) had counterproductive consequences from computer use. They were computer users, but knowing and experiencing negative aspects of the computer use made them quit. They used the computer for word processing and playing games. Both of them said that learning the computer was difficult. However, when they learned how to type using the keyboard and play games, they were excited.
While counterproductive groups had content-oriented reasons of harm of the computer, the group also had person-oriented reasons. For example, the abundant and adequate consequences group thought that computer was harmful because of sexual, violent, and fraudulent content sometimes found online. Moreover, they considered those harms not relevant to them but to young people because the young were impulsive, inexperienced, and curious about such materials. However, older adults might not be so curious about those materials, so it was less of a temptation and danger for them. Counterproductive participants expressed that using the computer caused physical discomforts such as sore eyes, headaches, numbness, and body nuisances. Those malfunctions were actual effects which they experienced and considered as problems. Importantly, most of the participants thought that health was the most important issue for older adults. Therefore, any risk of health problems tended to negatively affect their opinion toward using the computer.

Consequently, these participants lessened the time spent using the computer day by day. In Jong’s case, he had glaucoma surgery and concluded not to use the computer anymore. Kyong had another reason for quitting the computer: she decided that the computer was not as exciting as singing, dancing, and playing musical instruments. Those counterproductive participants’ final decision about the computer was quitting it because of the counterproductive effects.

Participants’ Attitudes Toward the Computer

In Chapter Two I argued that all attitudes include both an affective and a behavioral component. Accordingly, I will discuss participants’ attitudes toward the computer with reference to both components. In terms of affective elements of attitudes, participants tended to reveal their emotional feelings and evaluative dimensions such as “I like the computer” (Kyong-76, Ae-70, and Jung-66), “I think the computer is good” (Sun-78, Kyong-76, and Jong-85), and “The
computer is bad because my grandchildren were wasting their time” (Sun-78, and Keum-65). Those terms, like, good, and bad, revealed participants’ perceptions about the computer in terms of subjective reflection of feelings and evaluative expressions. The behavioral components were revealed in actions taken by participants to learn, use or quit using the computer.

Based on these two criteria (affective and behavioral) I divided participants’ attitudes toward the computer into four categories: a) enthusiastic b) receptive c) ambivalent and d) unreceptive.

**Enthusiastic Attitudes toward the Computer**

The enthusiastic attitudes referred to participants’ having or showing strong emotional, perceptual, motivational, and behavioral tendencies toward the computer. They had strong interests, admiration, deep satisfaction, beneficial recognition, or great eagerness toward computers with intention of using them and encouraging others to learn to use. Specifically, participants showed strong and confident affective interests and behavioral tendencies to use and learn the computer further. Importantly, they encouraged others to learn computing, no matter how old they were. In contrast to their receptive counterparts, enthusiastic participants tended to use more stronger emotional adjectives to describe their attitudes such as amazing (Seung-88), surprising (Seung-66), blessed (Seung-66), very interesting (Seung-66), and necessity. They encouraged others to learn the computer (Seung-66, Sam-75, Jung-66, & Chae-67) because they experienced the computer as useful and necessary to the older adults as well.

For example, an enthusiastic participant, Sam (75) had been using the computer for more than fifteen years. He used the computer for gathering information, communication with others, word processing, faxing, as a learning tool, and to have fun. At that time of this study, he used the computer for 5 – 6 hours a day writing books and using the internet. He even thought that
those hours were not enough for all that he wanted to do. But physical fatigue prohibited him from spending more time on the computer. Using the computer was one of the most important parts in his life. He said that “I enjoy the computer very much,” because he recognized the usefulness of it from the experience. It was a convenient tool for him to communicate with others whenever he wanted to. He worked as an associate executive of Pan Korean American Ministry in the Seniors of North East so he had been communicating with other members via email and fax almost everyday. He thought that without the computer, he would need to spend more time, energy, and money handwriting letters, going to the post office, buying stamps, and waiting for coming mail from the members. Therefore, he almost admired the computer, saying that “The computer is an amazing tool for communication.” He also used the computer for gathering various information about Christian news, political issues, news about Korea and Korean society, health issues, tourism, novels, management skills, and common topics.

Enthusiastic participants were willing to teach or encourage others (wives, friends, and older adults) to learn the computer whatever their situations were. For example, Sam (75) and Jung (66) encouraged not only their wives but also all the older adults who couldn’t use the computer, and Chae (67) encouraged his wife to learn computing because he knew the benefits of the computer. They contended that the computer was not just for younger generations, because there were lots of beneficial content and uses for older adults as well.

As a representative example of the enthusiastic participant, Seung (66) recognized that the computer was an amazing and fortunate tool that made it possible for him to be socially recognized and financially independent. Seung immigrated to the United States and became a government accountant after he passed the United States’ CPA exam. He said that the more he learned about the functions of the computer, the more he was surprised, because the computer
made it possible for him to handle and solve plenty of work in a short period of time. Also, the
computer made him socially recognized by his coworkers and bosses because of his superior
computer skills. Even though he was a minority in the workplace, having better computer skills
allowed him to teach others and lead important projects which others could not handle. He also
got paid more than others because of his better work performance abilities. After he retired, he
was asked to be a computer consultant for the department. There was no one else who could
better handle the problems which occurred in the process of updating programs. He was
recognized as the only person who could handle it, and was paid much more than average. He
said that he was blessed by the computer in his work area. As a minority, in the work place, he
was not able to succeed as much if there had been no computers. The computer was a requisite
tool for him to manage everyday living such as gathering information, communicating with
others, and having fun. He concluded that since the computer was a convenient and essential tool
for everyone, including older adults, everyone should learn to use it.

Receptive Attitudes toward the Computer

Receptive attitude was defined as participant’s attitude that tended to accept, consider,
prefer, apply, or be satisfied with the computer. Participants who showed receptive attitudes
tended to consider the computer as an alternative way of spending time, while Enthusiastic
participants considered it as a necessity in everyday life. They tended to own the skills of the
computer alone, not encouraging others to learn to use it. They never thought about teaching
others, because they still thought that their skill level was not high enough to teach others. So,
their satisfaction of using the computer seemed very self-oriented, enjoying the consequences of
the computer. Participants revealed their receptive attitudes saying that “Using the computer is
fun! Yes, it is very fun!”(Ok-80 and Hae-66), “I feel good about myself when I use the computer.”
(Ok-80), “The computer is marvelous. It has various functions! But I don’t use many of them. I just like it.” (Ok-80 and Ae-70), “The computer is good for spending time. I have nothing special to do everyday, so I just sit in front of the computer and use it. It's good for me.” (Ok-80), “The computer is very useful and helpful to people.” (Hae-66), “The computer is very important for modern life.” (Hae-66), and “the computer use makes life convenient.” (Ae-70).

For example, Hae (66), Ok (80), and Ae (70) used the computer to be alone enjoying a quiet life instead of having social activities with others. Hae and Ok attended an adult daycare center six days a week. There were various programs and activities for the older adults, but Hae and Ok disliked engaging in these. Hae experienced deprivation through her life from the experiences of divorce, single motherhood, immigrant status, poverty, her only son getting married and leaving her, and also being alone in the United States. She became a quiet person, spending most of time by herself.

She discussed the pleasure of using the computer not only for herself but also to help others. She volunteered her time to help other Korean older adults understand computing. All the announcements for residents of the senior apartment were written by the management in English only. She knew that most Korean older adults couldn’t understand these messages, so they were far from getting some benefits. Recognizing this, she interpreted the announcement in Korean, printed it out, and displayed it on the announcement board. She began to help the office with all things related to Koreans.

Hae was satisfied with the functions of the computer because it made her a successful secretary of a senior center. She used the Microsoft Word program a lot and it was very helpful for her to manage her work. Also, the internet allowed her to gather useful information on topics such as health, diet, and other interesting areas. Also, she constantly used this information in her
daily life. She revealed that she preferred to use the computer over other activities, and she liked the computer. She used the computer for helping others, and was willing to learn and use it in her life.

Ambivalent Attitudes toward the Computer

Ambivalent attitude was defined as participants’ attitudes that had both receptive and unreceptive tendencies toward the computer. Participants with ambivalent attitudes had both tendencies such as use, not use, accept, reject, satisfied with, unsatisfied with, consider using, or not considering using the computer. They had receptive attitudes toward the computer, saying that “The computer is convenient (Won-70),” “The uses of the computer are abundant (Won-70),” “The computer is necessary for modern life (Won-70),” “I want to use the computer (Won-70),” “The computer is good (Keum-65, Un-78, and Jae-72),” “I want to learn the computer (Keum-65, Un-78, and Jae-72),” and “I’m positive about the computer (Jae-72).”

For example, Won knew the various functions of the computer from his own computer experience and experiences of others. He learned to use the computer in his college days majoring in Engineering and used the computer when he worked for a popular company in Korea. After his immigration to the United States, he could not use the computer anymore, because he didn’t have enough time. He always felt that he needed to use the computer but situations didn’t allow him to use it. However, he knew the actual benefits of using the computer such as word processing, getting information from the web, and faster communication. He had receptive attitudes toward the computer, saying that “The computer is convenient because it made it easy for people to gather various and in-depth information.” He also said that “The computer helped people have fun and communicate via email and teleconference.” In Won’s understanding, the
computer was a necessity in modern life because it made people live in convenience and feel as a member of the society. In his expression about his attitudes toward the computer, he showed acceptance of the computer, was satisfied with his computer use, and intended to use the computer after he retired. For him, the computer was not only one of the objects which could be accessed someday, but it was also one of the symbols that represented his dramatic life change from white-collar to blue-collar job, which came with his immigration. If he had been in Korea, he might have used the computer everyday as he used to do before he had left there. Also, without any questions, he might have had enjoyed the life of the high-class, unlike his lifestyle in the United States as the owner of a laundry. Thus, using the computer meant a lot for him. Moreover, actual barriers to access the computer existed steadily in his life, and he regarded the problem as lack of time and the lack of need of computers in his work. These will be described in the next section.

Those receptive participants—Won (70), Keum (65), Un (78), Jae (72), and Yem (71)—also had unreceptive attitudes toward the computer. That meant that even though they recognized the computer as a convenient, useful, satisfying, and acceptable tool for modern life, they also rejected learning and using it. Their unreceptive attitudes derived from their current situations. First, the lack of time didn’t allow them to access the computer. For example, Won and Keum run a laundry all day, six days a week, without enough leisure time. Therefore, they didn’t get a chance to spend time sitting in front of the computer, although they acknowledged the abundant benefits of the computer. Since immigrants had financial difficulties, most of them tended to have family-unit based business, relying on all possible family members to run the business.

When they were in middle adulthood, they didn’t even think about learning or enjoying life, because earning money was the only way to survive in a foreign land. After they became
older adults, their children left home and the parents still had to pay the mortgage of the house, their children’s tuition, and more. Or they wanted to run the present business for as long as they could, even though they might suffer from lack of leisure time in their late lives. Therefore, they hardly found time to sit in front of the computer and tap the keyboard. When they had free time from work, they tended to engage in housework, family-related work, and church activities which were the basis of their lives in the United States.

Secondly, physical difficulties prohibited them from using the computer. For example, Un (78) could not move the right side of his body—his hand and leg. He had been suffering from these difficulties since middle adulthood. Therefore, he became passive and gave up most of the activities, even in the senior center. He observed many friends using the computer in the senior center, and his grandchildren at home. But he never thought about learning the computer for himself because of his disabled body. He was envious of them, thinking if he had been able to move his right hand, he could have used the computer. Actually, his body condition was not so bad that he couldn’t use computers. He had enough ability to use the left side of the body to engage in computer work. However, his mindset became weak and senile as he felt ashamed of himself for his bodily limitations.

Jae (72) also pinpointed that his health problems—headaches, lethargy, and heart problems—were the main reasons which prevented him from learning the computer. He regretted immigrating to the United States because he couldn’t accomplish the American dream, not only for himself but also for his children. He was in high SES in Korea, enjoying life, but after entering the United States the social and language barriers blocked him from everything. He experienced low SES and a jobless life, feeling guilty to his family members. After he became an older adult, his body health became very bad and so did his mind. He had no hope about his late
life in the United States and his health condition. For him, the only concern was his health issues, because he was suffering difficulties for a long time after having several surgeries for his heart. Therefore, even though he knew the abundant benefits of the computer and the enjoyment of using it, he never tried to learn or use it, because when he thought about doing something new or strange, he experienced dizziness and headaches. Moreover, he couldn’t concentrate on something because it brought him dizziness and headaches.

Thirdly, ambivalent participants expressed that the nature of work didn’t allow them to engage in using the computer. For example, Won expressed that if using the computer was beneficial for running his Laundromat, he might have used it. However, he knew that the business was a simple labor-based work which didn’t require computer skills for its management. He said that “If I were engaged in a professional job in the United States, I might have kept using the computer until now.” As a counterpart participant, Seung (66) had a professional job in the United States as a government accountant and it was natural for him to use the computer in his work environment, while blue-collar employees might not engage in using the computer. Won himself mentioned that if he were engaged in professional work in the United States, he might have used the computer already.

Unreceptive Attitudes Toward the Computer

Unreceptive attitude was defined as attitude toward the computer that embraced any tendency of doubtful, negative, rejecting, unwilling, uncertain, unfamiliar, or dubiousness. All the unreceptive participants were unfamiliar with the computer because half of them (Sun-78 and Bok-85) didn’t have direct computer experience and the other participants (Kyong-76 and Jong-85) had little computer experience. The latter participant group experienced several computer games, simple word processing, and internet surfing. Consequently, they were uncertain about
the computer itself and the actual uses of it. For several reasons such as bad health condition, negative self-image of old age, loss of cognitive abilities, and religious reasons, they had negative, doubtful, and dubious attitudes toward the computer. Finally, participants’ most decisive factors were behaviors which showed their unwillingness to learn/use the computer anymore.

Sun (78), Bok (85), Kyong (76), and Jong (85) belonged to the unreceptive group. Major unreceptive attitudes were rejection and unwillingness to use and learn the computer. Participants disclosed their rejective attitudes by saying that “The computer is inconvenient (Sun-78),” “The computer makes students waste time to study (Sun-78),” “The computer distracts me (Sun-78),” “I dislike the computer (Sun-76 and Kyong-76),” “The computer is male-oriented so it is unrelated to women (Sun-76, and Kyong-76),” “There’s no usage of the computer (Bok-84),” “The computer is inefficient (Bok-84),” “The computer is very sophisticated and can be broken easily (Bok-84),” “I’m not interested in the computer (Bok-84, and Kyong-76),” “The computer is only for young people not old people like me (Kyong-76),” and “The computer is not fun to do (Kyong-76).”

In terms of familiarity, the computer was an unfamiliar object to the participants. Sun (78) mentioned that “When my grandchildren used the computer, I didn’t know what it was.” Also, participants had doubtful, dubious, and negative attitudes toward the computer. They expressed that “I’m too old to learn it. My memory ability is getting worse day by day (Sun-78),” “Using the computer is not interesting anymore (Sun-76),” “I’m too old to use the computer (Sun-76),” “There is no usage of the computer for older adults (Sun-76),” “It was annoying (Jong-85),” “It can be easily broken (Jong-85),” “It is too easy to break the computer (Bok-84),” and “I am not concerned about learning the computer, which I’m not interested in (Kyong-76).”
Finally, all of them expressed rejection and unwillingness to use/learn the computer, saying that “I’m hopeless to learn it (Sun-78),” “It is impossible for me to learn it. It must be hard (Sun-78 and Bok-84),” “I don’t want to try to learn it again (Jong-85 and Bok-84),” “Older adults cannot learn the computer because of our lack of memory ability (Bok-85 and Jong-85),” “If I have an obligation to learn the computer, I would learn it (Kyong-76),” and “It must take several years to learn the computer (Sun-78).”

As an example of the unreceptive attitudes toward the computer, Sun (78) was unfamiliar with the computer because she didn’t have any direct computer experience except for some vicarious experience gained from sons, daughters-in-law, her pastor, grandchildren, and friends. She didn’t like or accept the computer as part of her life because she thought that the computer was not for her. When she lived with her son’s family, she saw her grandchildren working on the computer. At that time, she thought the computer was a tool for study, so she believed that the computer was a good and meaningful object. However, when she learned that they were not studying with the computer but were instead using it for having fun with gaming, chatting, and killing time, she became to consider the computer as useless. She also felt inconvenience when she wanted to make a phone call, but couldn’t because her granddaughter was using the Internet via the telephone line. Later, she saw her friends working on the computer at the adult day care center, but she didn’t try to know what they were doing. She still thought that engaging in the computer was useless. She said that “The computer lets students waste time from study and distracts me from reading the Bible, because not only it takes up time, but also the content of it makes my mind uncomfortable.” In her life, she had made priorities and had been trying to keep them. Reading and knowing by heart the verses of the Bible were her major priorities and she tried to concentrate her later life on them. Those activities gave her the
meaning of living. She even didn’t watch television and popular Korean soap operas at all, because they not only took away the time to work on the Bible, but also distracted her mind. She thought that the computer was a male-oriented object, because in her experience, most of the men rather than women worked on the computer and interesting computer games were male-oriented, such as card games. In her understanding, the computer was considered as a tool for vocational reasons and social life which were occupied by men in Korean society in both Korea and the United States. After learning about the computer, she still expressed doubtful, dubious, and negative uncertainties toward it.

**Profiles of the Computer Users and Attitudes**

I present findings of profiles of the participants from a synthesis of their attitudes toward computers and consequences of computer use. The format is a 4x4 matrix. Participants’ attitudes categorized as four subgroups: a) enthusiastic b) receptive c) ambivalent and d) unreceptive. And in consequences of the computer use, four subgroups were identified as a) abundant b) adequate c) insignificant and d) counterproductive. Those four subcategories for each broad dimension formed 16 users from the 4x4 matrix as follows. Only 9 profiles (profile 1, 2, 5, 6, 9, 10, 13, 15, and 16) were occupied by the participants, and 7 profiles (profile 3, 4, 7, 8, 11, 12, and 14) were not occupied with participants for this study.
### Table 4. Profiles of the Participants and Attitudes Toward The Computer

<table>
<thead>
<tr>
<th>Attitudes Toward The Computer</th>
<th>Consequence of the Computer Use</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enthusiastic</td>
<td>Abundant</td>
<td>Seung (66), Sam (75), Jung (66)</td>
</tr>
<tr>
<td></td>
<td>Adequate</td>
<td>Chae (67)</td>
</tr>
<tr>
<td></td>
<td>Insignificant</td>
<td>Type 3. Enthusiastic &amp; Insignificant</td>
</tr>
<tr>
<td></td>
<td>Counterproductive</td>
<td>Type 4. Enthusiastic &amp; Counterproductive</td>
</tr>
<tr>
<td>Receptive</td>
<td>Type 5. Receptive &amp; Abundant</td>
<td>Hae (66)</td>
</tr>
<tr>
<td></td>
<td>Type 6. Receptive &amp; Adequate</td>
<td>Ok (80), Ae (70)</td>
</tr>
<tr>
<td></td>
<td>Type 7. Receptive &amp; Insignificant</td>
<td>Type 8. Receptive &amp; Counterproductive</td>
</tr>
<tr>
<td>Ambivalent</td>
<td>Type 9. Ambivalent &amp; Abundant</td>
<td>Won (70), Keum (65)</td>
</tr>
<tr>
<td></td>
<td>Type 10. Ambivalent &amp; Adequate</td>
<td>Un (78), Jae (72), Yem (71)</td>
</tr>
<tr>
<td></td>
<td>Type 11. Ambivalent &amp; Insignificant</td>
<td>Type 12. Ambivalent &amp; Counterproductive</td>
</tr>
<tr>
<td>Unreceptive</td>
<td>Type 13. Unreceptive &amp; Abundant</td>
<td>Sun (78)</td>
</tr>
<tr>
<td></td>
<td>Type 14. Unreceptive &amp; Adequate</td>
<td>Type 15. Unreceptive &amp; Insignificant</td>
</tr>
<tr>
<td></td>
<td>Type 16. Unreceptive &amp; Counterproductive</td>
<td>Bok (85)</td>
</tr>
</tbody>
</table>

### Profile 1, Enthusiastic-Abundant Consequences

The group had the largest number of participants among the 9 subgroups, (Seung-66, Sam-75, and Jung-66). They were a professional in chemical engineering (Jung-66), a pastor (Sam-75), and a CPA (Seung-66). They revealed enthusiastic attitudes with various perspectives such as self-management, career development, helpful resources, and emotion. For example, they described their attitudes with strong interest, such as “The computer helps people to be independent” (Seung), “Having better computer skills than my peers played a role for me to get social recognition and compensation” (Seung), “The computer is a convenient tool that makes life easy” (Seung and Sam), “important tool for communication” (Jung), “I like the computer very much” (Jung), and “I enjoy using the computer” (Sam).
In terms of admiration, they expressed their attitudes by saying that “The computer is an amazing tool with various functions” (Seung), “producer of comprehensive information” (Seung), “appropriate tool for gathering information” (Jung), “The computer produces lots of profit” (Sam), “The computer is helpful” (Sam), “The computer makes people have wide perspectives” (Sam), “It widens a person’s world view” (Sam), “a tool for learning leadership” (Sam), “gives new ideas” (Sam), and “The computer is a part of life, and a necessity” (Sam and Jung). They revealed their eagerness to use computer not only for themselves but also expressed that “As a Christian, I want to use computer for appropriate purposes in productive way” (Seung), and “I want to use the computer to listen to the Bible” (Seung), but also for helping others such as “I use it for my wife (Sam), my friends (Sam and Jung), and my church members” (Sam), and “I encourage others to use the computer” (Seung, Sam, and Jung).

Profile 2. Enthusiastic-Adequate Consequences

Chae (72) was the only participant who belonged to this group. He had six years of computer experience with a strong interest and eagerness to learn the computer, recognizing sufficient and proportionate consequences of the computer for himself as an older adult. As a novice computer learner, he expressed enthusiastic and adequate attitudes toward the computer. His skills were limited to basics such as emailing, surfing limited web sites, reading newspapers, and receiving and viewing family pictures. He appreciated being able to use the computer, saying that “The computer is convenient,” “The computer is good and I am positive about it,” and “I think positively think about using the computer.” Most of his attitudes were future-oriented, such as “I want to spend time using the computer when I retire, so that it will make my life not boring,” “I hope to learn more computer skills,” “I want to learn if there is anyone who could teach me
computer skills, I feel it, I feel eager to learn,” and “I will teach my wife after I learn computer skills.”

He mentioned adequate consequences of the computer in his perspective, saying that “The computer is beneficial for reading the newspaper, communicating via email, giving and taking pictures, getting information such as driving directions, and writing letters or making cards.” He also mentioned that “The computer is a good tool for Christian ministry,” “I want to play computer games to have fun,” and “I wanted to learn it myself, so I bought a self-instruction book.” No matter what his level of knowledge and skills were, he seemed to enjoy what he had and was enthusiastic about learning and using the computer further.

Profile 5. Receptive-Abundant Consequences

The participant who had a receptive abundant attitude toward computers tended to prefer, tried to apply, and was satisfied with the computer use for various uses and enjoyed challenging herself to accomplish beneficial usage of the computer in her life situation. Hae (66) belonged to this group, being satisfied with her learning achievement from self-learning. She expressed that “The computer is fun,” “Computer learning is easier than I thought,” “I don’t have any negative feelings about the computer,” “Computer is useful and helpful,” “The computer becomes a part of my life,” “I gained confidence in myself from the achievement of self-learning,” and “The computer is for only selected people.”

Her attitudes toward the computer was strongly embedded in self-satisfaction and set up a boundary that divided computer users and nonusers. She said that “Staff of any center for older adults dislike to teach computer skills to older adults because they don’t want to share their computer skills. Intentionally, they want to monopolize the skills because it gives them power.” Even though she recognized the problem among the staff, she tended to duplicate this attitude by
saying, “I cannot teach others with computer skills.” Therefore, it was recognized that she set up a boundary of computer use for herself to accomplish and enjoy.

She mentioned various uses and beneficial consequences of using the computer, such as “The computer influences society a lot—learning knowledge and common sense,” “There’s no negative influence of computers,” “A computer is a tool for helping others,” “I want to help others with the computer,” “I want to learn computer skills,” and “The computer is a good tool for getting information.”

One significant use of the computer for herself was “helping others with computer skills.” She volunteered to help Korean older adults in her apartment because there were few older adults who could speak English or operate the computer. She translated various documents and announcements from the management office from English into Korean and distributed these to Korean older adults. She might be the person who practiced ideal usage of the computer for others who might be infrequent users of the computer.

Profile 6. Receptive-Adequate Consequences

Participants who had receptive adequate attitudes toward computers tended to accept, prefer, or be satisfied with the computer and thought that computers had sufficient uses and beneficial consequences. Ok (80) was a limited computer user of basic games while Ae (70) was a practical computer user who used it for emailing, searching information on the Web, and as a word processor. However, both of them enjoyed using the computer, revealing their receptive attitudes such as “The computer is fun” (Ok-80), “It is hard to learn computer skills” (Ok-80), “I feel good when I use the computer” (Ok-80), “The computer is marvelous” (Ok-80), “I want to learn more about computer games for older adults” (Ok-80), “If someone teaches me how to use a computer, I want to learn it” (Ok-80), “It takes a long time to learn the computer” (Ok-80), “I
easily forgot what I’ve learned about computer skills” (Ok-80), “The computer is good” (Ae-70), “The computer is convenient” (Ae-70), “I encourage others to learn how to use the computer” (Ae-70), “The computer is speedy” (Ae-70), and “The computer makes it possible for me to correct what I typed” (Ae—70).

Both of them had satisfactory attitudes toward the computer which derived from using it. For example, Ae (70) pointed out that “The computer has beautiful characters” because she used it to type letters. On the other hand, Ok (80) expressed various attitudes toward computers that showed acceptance of them, saying, “A computer is a good means to spend time,” “Having better computer skills as a minority gives me social recognition and compensation,” “Using the computer is better than gambling,” “I like flower-like, colorful, and beautiful computer games,” and “I want to learn those computer games.”

Profile 9. Ambivalent-Abundant Consequences

Participants who showed both receptive and unreceptive attitudes toward computers were categorized as ambivalent group. Even though they might have an ambivalent tendency, they recognized abundant use and beneficial consequences of the computer from previous experiences with direct or vicarious experience. Two currently hard-working participants, Won (70) and Keum (65), belonged to this group. Won learned how to use the computer when he was in college, but after immigrating to the United States, he couldn’t continue to use it. This was because the nature of the work, as a laundry owner, didn’t require much knowledge of technology. Also, a lack of time available to use the computer resulted in him not using it. He worked six days a week, from 7:00 a.m. to 7:00 p.m. at the laundry and he reserved Sundays for church and family-related activities. Therefore, he always suffered from lack of time. He knew the abundant uses of computer from his school experiences. He knew the basic uses of computer
for personal use but also in-depth knowledge to make certain programs. Therefore, he easily said that he knew the various uses for the computer, for both personal and work-related purposes.

He expressed his attitudes toward the computer as “The computer is convenient,” “I know the convenience of the computer but I cannot use it because of a lack of time,” “Computer usage is abundant,” “The computer is necessary for modern life,” “I want to learn and use the computer later,” “The computer gives social recognition,” “I’ll use the computer when I definitely need it,” “I want to use word processing, email, Internet,” “I frequently feel the need to use the computer in everyday life,” and “I want to learn the skills for everyday living.”

The other participant, Keum (65), was a hard worker, also a laundry owner like Won. She never used a computer but she had vicarious experience from her children, husband, and church members. Her husband was even ready to teach her. Therefore, she recognized an abundance of positive and negative things about computing. She had receptive attitudes toward the computer because she expressed “The computer is good,” “The computer is marvelous,” “Computer learning is easy,” “I never imagined how the computer could be,” “It’s so good,” “I want to learn it,” “I will definitely learn the computer and use it faithfully,” and “The computer is convenient.”

However, both Won and Keum had unreceptive tendencies toward computers because they attached a condition that they needed enough time to learn and use them well. Both of them said that they would learn when they retired from work. This might be reality for someone who had a job to perform but couldn’t access a computer even though he/she knew the benefits of it. Their work status was the major reason they were unreceptive toward computers. Moreover, Won added that the computer lacked security, especially considering privacy online.

On the other hand, Keum had lots of negative perceptions of computers, for she was a woman who counseled many Korean moms whose young children had computer-related
problems. The children engaged in chatting online, explored sites with sexual content, and spent too much time with the computer wasting their time and energy. In the most extreme cases, some children dropped out school and their families experienced disruption. She helped them by offering prayer and counseling for a long time.

These experiences led her to believe that computers were both good and bad. As a Christian, she strongly expressed that “Even though the computer is both good and bad, Christians have to overcome this with the power of faith and use the computer in good ways. As a Christian, watching and listening to bad material makes our souls and minds dirty, so we should not contact those things. Moreover, the church has to educate young people on this subject.”

Even though Won and Keum knew the abundant use and beneficial consequences of the computer, they were unreceptive to the computer at the time of the study. They recognized and had negative thoughts about computers and also had little time to learn or use them. However, they wanted to learn how to use the computer when they had more time.

Profile 10. Ambivalent-Adequate Consequences

Three participants, Un (78), Jae (72), and Yem (71), had limited, solely vicarious computer experiences. Consequently, all of them had very surface understandings about computers from watching their grandchildren and friends’ computer use. Before they began to understand the computer, they labeled it as “A tool for study” (Un, Jae, and Yem), “A tool for games” (Un, Jae, and Yem), and “A tool for communication” (Un, Jae, and Yem). After being exposed to it, they labeled it as “A tool for information gathering” (Un and Yem), “emailing” (Yem), and “listening to Korean news” (Yem).
They were not regular computer users, even though they had computer access at ADCC and at their children’s homes. Un and Jae gave up on learning how to use a computer for personal reasons. Un said that “I don’t want to learn the computer because there is no need for it.” Jae didn’t learn the computer because of physical difficulties such as headache, lethargy, and heart problems. However, Yem gave up on learning the computer because of the influence of others. Yem asked her daughter and grandchildren to teach her computer skills, but they rejected this idea because they believed she did not have sufficient English ability.

Those experiences made them less self-confident, and they noted that they felt isolated from others. Yem said that she felt depressed because she couldn’t operate computer programs that even her five-year-old granddaughter could operate. Jae said that he was ashamed because he couldn’t use the computer. However, these negative experiences made all of them want to learn the computer when the conditions were right.

All of them became receptive about computer learning. However, they had preconditions for learning the computer such as “when I become healthy” (Jae), “when I have someone to teach me” (Un), and “if someone gives me a ride to a computer institution” (Yem). These conditions seemed not to be achieved within a short period, because Un was used to being isolated and depressed. Jae’s physical condition was not good enough for her to recover. In Yem’s case, there was nobody living near her to give her a ride to any computer institutions. Therefore, their preconditions seemed difficult to overcome.

Other reasons for them to be unreceptive toward computers were some negative aspects, such as having sexual and violent content and risk of fraudulence with the computer. They (Jae and Yem) often worried that their grandchildren would be exposed to negative or dangerous material.
Profile 13. Unreceptive-Abundant Consequences

A participant who knew abundant use and beneficial consequences derived from using the computer but had unreceptive attitude toward computers might be a unique case because the person might give up what was desirable. Sun (78) was the participant who showed strong interest and admiration toward computers. She expressed that “The computer is good for learning,” “The computer is very good because it makes life convenient,” “I cannot express how much I like it with words,” and “I envy others who use the computer.” She even said that if she could use a computer, she might use it for Christian ministry. Also, she wanted to learn English by using the computer.

Even though she had a strong interest in computer and computer learning, she gave up learning computers for several reasons, including old age, not having her own computer, taking too long time to learn, her bad physical health, and her priority of everyday living. Among them, the major reason to give up learning the computer was to keep the priority of everyday living. She was a devoted Christian whose major priority in her life was reading and memorizing the Bible. She didn’t even watch Korean videos, because these went against her priorities. She said that “Watching a Korean video inhibits me from reading and memorizing the Bible because it takes time and I don’t have much time to do both. If I do one thing, I have to give up the other thing. Therefore, I choose to keep the priority.”

It was an intentional unreceptive attitude toward computers, even though she fully knew the abundant use and beneficial consequences of using the computer, such as games, teleconferencing, emailing, information exchanging, multimedia functions, purchasing goods, gathering information online and listening to sermons and Christian music.
Profile 15. Unreceptive-Insignificant Consequences

Bok (85) was unreceptive toward the computer because she thought computers were irrelevant for her, and she gave up learning and using them. She expressed her unreceptive attitude toward the computer by saying “I gave up learning the computer. It is not for me.” She was getting old and physically unhealthy day by day. She experienced memory loss and concentration problems. Also, she had a bad health condition with heart problems, high blood pressure, headaches, trembling hands, weakening legs, and the side effects of several surgeries. At the time of the study, her major concern, health, took priority in her life. Because of her physical problems, she concluded that the computer was insignificant for her. She thought that computers were only for younger people. She expressed her attitudes toward computers by saying, “I like them because they are very convenient for living. But older adults cannot use computers because we have bad memory ability, and it is also too easy for us to break them,” “It is hard to learn,” “If I were younger than I am now, I might learn it,” “If I learn it, I want to use it only for Christian ministry,” “I like computers and I think they are very convenient,” “However, the computer is for young people, not for older people.”

Profile 16. Unreceptive-Counterproductive Consequences

Participants who had actual counterproductive experiences from the computer use showed unreceptive attitudes toward computer. As the evidence of the unreceptive attitude, two participants, Kyong (76) and Jong (85), stopped using the computer after experiencing unexpected counterproductive results including physical difficulties (Kyong and Jong), disinterest in the content of computers (Kyong), and peer group effect (Kyong and Jong). Both of them experienced sore eyes, headaches, tiredness, dizziness, and other physical difficulties due to computer use. Kyong was uncomfortable with the content of the computer, western card games,
because she thought this was male-oriented. Both of them lost interest in computer training when their peers had dropped out of the sessions. When they started to learn the computer, there were fifteen participants, but the number of attendants became smaller and smaller, and finally they began to lose interest in learning. It caused them to quit using the computer, but physical difficulty was the major reason for them to be unreceptive toward computers.

Even though they had unreceptive attitudes at the conclusion, they exhibited various attitudes toward the computer as well, such as “I’m confident when using the computer” (Kyoung), “I have no interest in the computer” (Kyoung), “the computer is male-oriented” (Kyoung), “I may learn the computer if I feel any obligation” (Kyoung), “I don’t know any bad things about computers” (Kyoung and Jong), “The computer is convenient” (Kyoung and Jong), “I have no usage of the computer” (Kyoung), “I don’t want to learn the computer again” (Jong), and “The computer is annoying” (Jong).

**Computer Presentation and Attitude Changes**

For the collection of data on the research question 3, How has the computer presentation affected inexperienced participants’ attitudes toward the computer?, two sessions of computer presentation were held at each site, Calvary Presbyterian Church (CPC) and Baltimore Christian Center (BCC) for Older Korean Adults with seven computer inexperienced participants. There were three participants at the CPC, and four at the BCC.

The computer presenter was myself, as the researcher of this study. The presentation was about basic understanding of computer functions such as word-processing, Internet, E-mail, teleconferencing, multimedia, and watching soap operas. The presenter was familiar with those having more than twenty years of computer experience.
After the pre-interview with participants, a series of two-day period computer sessions were held; each session lasted for approximately one hour. On the first day, since they had no knowledge about the computer at all, the presenter explained about the basics of the computer, such as the keyboard, the mouse, hardware and software, the microphone, camera, word processor, multimedia functions—music, picture, film—and of course, the Internet and the World Wide Web (WWW).

In the second session, the presenter explained and showed how to use the word processor, media player, Internet, and how to communicate with others. For example, participants typed their names on the computer, printed these out, read Korean newspapers on the Web, watched Korean soap operas, read emails, viewed pictures, researched information about osteoporosis, played games, and visited their own church’s website.

To scrutinize computer inexperienced participants’ attitude changes, participants engaged in both sessions of computer presentation and post-interviewing. The specific description of it listed in Ch. 3, Research Design in General Interview Protocol.

As a result of computer presentations, participants changed their attitudes toward computers in three ways: a) upward change b) downward change and c) maintenance of the status quo. Participants’ attitudes were categorized as enthusiastic, receptive, ambivalent, and unreceptive before and after the computer presentations.

The upward change referred to any form of attitudinal changes from lower level of attitudes to upper level, as shown by the labeling on the table No 4. The data showed only one form of upward change, change of attitudes from unreceptive to receptive.
The downward change referred to any form of attitudinal changes from upper level to lower levels, as shown by the labeling on the table No. 5 on p.122. The data revealed only one form of downward change from ambivalent to unreceptive.

The maintenance of the status quo referred to participants who showed no change in their attitudes toward computers after the computer presentation. The participants’ attitudinal changes were put into a diagram with two-dimensional features. For the sake of convenience, the lower part was named unreceptive attitudes and the upper part was named as receptive attitudes. The middle part was for the ambivalent attitudes that coexisted both with receptive and unreceptive attitudes.

Before the Computer Presentation

Before the computer presentation, participants formed two types of groups: a) ambivalent attitudes and b) unreceptive attitudes toward computer.

Ambivalent Attitudes

Predominant participants (Sun-76, Keum-65, Jae-72, Bok-85, and Yem-71) had both receptive and unreceptive attitudes simultaneously. It might be natural for them to recognize both the strengths and weaknesses of the computer at the same time, because they were not computer users at that time, but they had various experiences with the computer.

In terms of receptive attitudes, their description was not specific, but rather unpolished and limited in perspective. This might be derived from having limited computer experiences or only vicarious experiences. Therefore, they were generous in their praise of computers—“good, marvelous, and convenient,” concerning themselves with limited functions such as “religious usage and typing.” Even though they revealed their willingness to learn the computer, it was still undeveloped in terms of the computer’s various functions or uses.
They described their receptive attitudes toward computers as “The computer is a good thing” (Bok-85, Sun-76, Un-78, Keum-65, and Jae-72), “The computer is marvelous” (Keum-65), “The computer is very convenient” (Bok-85), “I want to use the computer for religious purposes such as ministry” (Bok-85), “I want to learn it” (Keum-65, Jae-72, and Yem-71), “A computer has both good things and bad things” (Keum-65), “Typing with a computer is easier than handwriting” (Jae-72), “The computer has beautiful characters to use” (Jae-72), and “I have no rejection of the computer” (Jae-72).

On the other hand, participants’ unreceptive attitudes seemed more specific than their receptive descriptions. This might be a result of their vicarious experiences with family members, because their major sources of experiences were with family. Also, they expressed more unreceptive attitudes than receptive attitudes, because it might be easier for them to find possible difficulties. They described their unreceptive attitudes toward computers for the reasons of old age and health concerns, saying, “The computer is not for older adults” (Bok-85), “I’m too old to learn” (Bok-85 and Sun-76), “The computer is too easy to break” (Bok-85), “Computer skills are hard to learn” (Bok-85 and Sun-76), “It is impossible to learn computer skills” (Bok-85), and “I cannot learn it because of my health problems” (Sun-76 and Jae-72). In their opinion, age seemed to play a role as an obstacle, for not only as physical but also mental functioning.

Bok’s (85) idea was that the computer was easy to break because the computer seemed complex. She thought that electric products were delicate and fragile to operate and easy to break. Thus, she tended to be unreceptive toward the computer.

Another reason for being unreceptive toward the computer was negative content which the computer might contain. Yem (71), Sun (76), and Jae (72) strongly expressed negativity toward the computer because it had bad content saying that “The computer is bad” (Sun-76 and
Keum-65), “I worry about inappropriate content on the computer for children” (Yem-71 and Jae-72), and “I feel a little bit of rejection about computers because they are inappropriate for children to use” (Yem-71 and Jae-72). They experienced harm from violence, inappropriate sexual material, and malfunctions of the computer as described in the previous subchapter. Comprising the above bad experiences made them have negative images about the computer as an unfamiliar machine-like object to them.

Unreceptive Attitudes

The other group, the unreceptive attitudes, consisted of only one participant, Un (78). He expressed strong unreceptive attitudes, such as “I don’t want to do the computer” and “There is no use for it.” It was easy to recognize that he did not consider himself as capable regarding computer learning or using a computer. It seemed that he put himself on the outside of a boundary that excluded him from the computer and its users. Un had physical discomforts which limited the use of his right side of the body, including his arm and leg. Due to his physical disability, he intentionally rejected socialization with others by any means, including by using the computer.

After the Computer Presentation

The computer presentation resulted in three types of attitude changes: upward change, downward change, and maintenance of the status quo.

Upward Change

Un (78) experienced a dramatic change from unreceptive to receptive attitudes. He was unreceptive about computers and unwilling to learn before the computer presentation. The computer presentation helped him to understand the various functions, benefits, and practical usages for Korean older adults. The presentation also led him to change his attitudes toward
computers to be more receptive than before. Before the presentation, unlike the other participants, he did not have much experience with computers. He knew very little about the functions of computers before the computer presentation. The computer presentation might have been the first direct computer experience for him.

After the computer presentation, Un’s attitude was more receptive, saying that “The computer is very good,” “The computer makes everything possible,” “The computer is beneficial,” “It is inconvenient if someone does not use the computer,” “I think using the computer is very good,” and “I want to learn about the computer if someone teaches me.” There were two reasons why Un became receptive to computers. First, he discovered a practical use of the computer as a communication tool. He hoped to use the computer to communicate with his children in Korea via email and teleconferences. Since he was a physically disabled widower, he needed intensive care from others. Even though his only son and his family lived in Baltimore, they did not take care of Un as much as he needed, because they were very busy working seven days a week. Un complained that they rarely visited him. Therefore, he had to do everything himself, including cooking, washing the dishes and clothes, cleaning the house, and shopping.
Un also seemed not only emotionally but also physically isolated. He seemed emotionally very senile and eager to keep contact with his family members as much as he could. He wept many times during the interviews when he talked about his family members, his deceased wife, his life when he was young, and the difficulties of living in the United States. He also did not have enough money for basic living costs, so he did not call his children in Korea in order to save money. Now he had hopes of communicating with his family members in Korea via the computer. It seemed a fascinating solution for him to communicate with family members in Korea in light of his hopeless situation. Secondly, Un started to consider the computer as a means for overcoming his physical disability. He hardly moved the right side of his body: leg, arm, and lips. Therefore, it was hard for him to walk, eat, talk, and move his right hand. He avoided talking, eating, and going anywhere except the adult daycare center and church. But he found out that he could work the computer with his fingers even though his right arm was not

### Table 5. Computer Presentation and Attitudes Change

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<th>Before Computer Presentation</th>
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<td><strong>&lt;Ambivalent Attitudes&gt;</strong></td>
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<td><strong>&lt;Unreceptive Attitudes&gt;</strong></td>
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free to move. After tapping the computer keys with his left hand, he became interested and hopeful about learning how to use the computer since it seemed a helpful way of communicating with family members, listening to Korean news, watching Korean drama, playing games, and purchasing goods. Those reasons were enough for him to consider that the computer might be helpful for him to be more independent.

*Maintenance of the Status Quo*

Three participants maintained their status quo as ambivalent: both receptive and unreceptive attitudes. In the end, all three participants (Keum-65, Jae-72, and Yem-71) remained in the same group because they had already known about the computer from various computer experiences. For example, even though Keum (65) expressed a receptive attitude toward computers, she was still wondering about learning the computer because she could not overcome her main barrier: lack of time. She considered learning the computer when she retired from work. Therefore, she still belonged to the ambivalent group.

Before the computer presentation, she acknowledged the usefulness of the computer and the convenience of it too. After the computer presentation, the degree of her receptive attitude toward the computer seemed increased, as she was expressing more strong interests toward the computer, saying that “The computer is very good. I didn’t imagine it at all. It is truly convenient and if I have time I want to learn the basics,” Moreover, she said that “I definitely have to learn it and use it usefully.” Even though she learned that the computer was useful from the computer presentation, she firmly expressed that she wouldn’t learn it now. There were two recognizable reasons: first, she believed that the computer contains un-Christians material and also uneducable content for young people; second, her lack of own time to learn it. Regarding the first reason, she said that the computer had bad material or functions such as sexual, violent, and intoxicative
contents which went against Christian morals. She recalled that several Christian families in her church were disrupted by these. And she showed her unreceptive behavior because she could not learn the computer due to a lack of time. She worked all day, and got tired easily. Therefore, even though she knew the benefits of the computer, she hesitated to accept and learn it.

Jae (72) and Yem (71) both were worrying about inappropriate content on the computer, too. Perhaps one of the findings from the computer presentation was that participants begin to seriously consider their behavioral tendencies for learning the computer. For all three of them, the computer presentation was the first semi-structured learning opportunity to know and think about the computer.

In conclusion, even though there were some indicators of their slight inclination toward receptive attitudes, they still remained in the same ambivalent group. The main reason might be that they already knew about the overall features of computers before the computer presentation. Secondly, they were not ready to overcome the personal barriers: those against Christian morals and uneducable contents of the computer, physical discomforts, and lack of time, in order to learn how to use computers.

**Downward Change**

Two participants (Bok-85 and Sun-76) expressed more unreceptive attitudes after the computer presentation. However, they still were both simultaneously receptive and unwilling to learn computers. They tended to make unreceptive decisions, such as deciding to give up learning how to use the computer.

The computer presentation might have caused several effects to Bok and Sun. First, the computer presentation might have given them an opportunity to consider and arrange their ideas, opinions, and feelings about the computer that were formed by their vicarious experiences. The
participants had never been introduced to all of the functions of the computer. Their images or thoughts about it were fairly limited and often did not reflect the entire capabilities of the computer. For example, Sun thought that a computer was a tool for studying, teleconferencing, or playing games. Therefore, the content of the computer presentation might be new in terms of the functions and usages of the computer. She began to know, consider, and change her attitudes after learning more about the computer. For example, Sun and Bok wanted to use the computer for religious reasons. They thought that it might be good to use it for the Christian ministry.

Secondly, the computer presentation provided an opportunity for participants to consider learning and using the computer—in ways hitherto not experienced. After having a computer presentation, participants began to consider the possibility of their using the computer at the next level. Knowing the specific and various functions of the computer might allow them to examine their ability to learn and use it. Since attitude was defined as the predisposition of behavioral tendencies, the computer presentation let them examine their behavioral tendency as a decisive attitude. In the process, they might consider various aspects such as physical ability, benefits and weaknesses of using computers, side effects of using computers, or responses from others.

Thirdly, after the presentation, a few participants came to believe that the computer was not suitable for older adults like them. Knowing and learning about various features of the computer led participants to conclude that the computer was inappropriate for them. It could be seen as a very complex and difficult gadget for them to use. They became to think that the computer was an inappropriate tool for them, that it was appropriate only for their grandchildren (Bok). Evidence of this was that Sun and Bok did not reveal their attitudes about personal usage of the computer, but did talk about young persons’ usage of it.
Socio-demographic Factors and Participants’ Attitudes Toward the Computer

I have divided the factors shaping participants’ attitudes toward the computer into two parts: those factors emphasized by participants (perceived factors) and factors I (the researcher) have observed to be significant, but were not emphasized by participants (latent factors).

Perceived Factors

There were five (5) factors that participants perceived to have significantly affected their attitudes toward the computer: age, health condition, gender, intellectual curiosity, the learning environment, religious faith (Christianity), and types of temperament.

Age was perceived by participants as a powerful factor in their attitude toward the computer. The older the older-adults are, the more they become unreceptive and unwilling to learn or use the computer. Most of the oldest older-adults (over 85 years old: Jong-85, and Bok-85) were unreceptive and unwilling to learn the computer. They constantly said that “If I were ten years younger than now, I could learn and use the computer.” “I’m too old to do that.” (Bok-85 and jong-85). Bok (85) and Jong (85) constantly reiterated that their age was too old to learn the computer.

But even middle-older adults, such as Sun, 78, considered age to be influential in her attitude formation. She thought that her age was the major barrier to be familiar with the computer. She said that “If I were around 50 years old, I could learn the computer and use it. But, I’m 78 years old already. I’m almost 80. So I’m too old to learn new things like that. I don’t have a hope for it.” Her perceptive age seemed to discourage her from learning new things. Older adults easily said that “When you are over the age of 65, the time goes as fast as an arrow. When you are young, one day seems like a one hundred days. But when you are old, it seems like a glimpse of light!” Why did older adults, especially the participants, consider their ages as too old
to learn and use the computer? It seemed to be mostly derived from psychological perceptions based on their certain experiences. For example, Sun (78) said that she experienced short-term memory loss and physical ability decline from everyday activities. In her understanding about aging, being older meant physical deterioration in terms of disease, losing the ability to learn, losing the ability to manage life activities, and sensing and admitting of losing ability to concentrate on different things simultaneously. She contended that her age, 78, was a barrier against becoming familiar with the computer, so the computer must be for people younger than her.

Age, of course, is used here as a proxy for health condition for it (age) pointed to the participants’ state of mind and body. Both Bok and Jong, for instance, believed that their physical and mental abilities (brought on by aging) were decreasing day by day, and they felt this every single day. Jong’s first concern was bodily deterioration which prohibited him from walking and moving his body. He had to use an electric wheelchair all the time which caused much discomfort, and he truly became dependent on others. He was not accustomed to the wheelchair and it was delicate to operate. One day, he fell down from the wheelchair on his way to the senior center, while on the sidewalk. He said “I thought I was dying at that moment, like that. I was not familiar with the road to ride the wheelchair. I never imagined a wheelchair in my life, but I became like that. I thought it was the process of aging, being older. Sometimes I was desperate about being older because I had to give up very simple movements and stop enjoying my life with planting, listening to music, playing games, and hanging around with friends. Therefore, I thought I was totally dependent on others.” In his understanding, his age was too old to continue using the computer.
Bok (85) also showed that because of her age, 85, she would not learn or use the computer. She said that as she got older, her physical health became very bad. She identified the physical declining as being older, aging. She had heart surgery three times, and also appendix surgery. She had a difficulty with digestion, and it caused a nutritional imbalance. She believed that after her third heart surgery, her bodily movements were dramatically reduced. She was taking oriental medicine at the time of this study. She had high blood pressure, headaches, and memory loss. Those experiences made her to believe that she was too old to learn and use the computer. And she thought that the computer was only for younger people who were at least ten years younger than her. She said that “I’m too old to learn the computer. I never thought about learning the computer because I’m 85 years old already. I am even forgetting what I have learned and known. Then how can I learn it? Moreover, sometimes I feel numbness on my fingers. I’m worrying about this. I have to go to the doctor’s office soon. Thus, I never thought about using the computer at all. It is true”. Both of them had unreceptive attitudes toward the computer, even after the computer presentation.

On the other hand, young-older adults tended to be receptive toward the computer. For example, Seung (66) contended that the age was not an issue at all in learning and using the computer. He wanted others to change their mind about age. He believed each person’s life expectancy was longer than they felt. He said “People think that the age of retirement is 65. Yes, that’s true, but we can work after seventy years old and more. What about working after eighty years old? It is possible because it depends on the mind. So we have to think that we can work until we are eighty years old. Yes, we can work until we are no longer alive in this world. So, the most important one is not the number of our age, but our mind.” It was easily recognized that he was seemingly healthier than his oldest-old counterparts such as Bok (85) and Jong (85). Seung’s
inexperience regarding physical deterioration with aging might be the reason for him to say that age was not important in the course of life. However, he felt it and believed like that age could be overcome by a person’s mindset. He had enthusiastic attitudes toward the computer, saying that “The computer plays a very important role in modern days. It is no more a luxury but a necessity in living. I really like the computer. I like it very much. It is a significant and important part of modern life.”

The data showed us that there are two perspectives held by older adults toward age. The first party of people thought that the chronological age was an indicator of being senile and the deterioration of physical functioning. When they experienced some kinds of physical difficulties, they became emotionally senile too. Thus, people who thought that “I’m very old and I cannot do certain things”, tended to give up or become unwilling to learn about computers.

For them, having the computer presentation session was helpful, but it was irrelevant for them. They expressed that the computer was convenient and useful (Bok and Jong). However, they did not use the computer because they thought the computer was annoying. When they admitted that they are old to do something, they prohibited activities which they believed to be annoying. This psychological atmosphere seemed to strongly affect the participants’ attitude formation toward the computer.

On the other hand, for the people who thought that the age was a psychological obstacle to overcome, computer use was not a problem at all. Rather, using the computer was one of the challenges which older adults achieve.

Participants’ health condition was another factor that seemed to have an obvious effect on their attitudes toward the computer. There were four sub-factors. 1) health condition as the major concern in late lifetime 2) one’s health recovery is impossible 3) complete dependency to
others about health matters 4) healthiness. Participants (Bok-85, Kyong-76, and Jong-85) who expressed that health was the major concern in their late lifetime showed unreceptive attitudes toward the computer. All of them strongly emphasized their current health condition as not good at all, citing numerous illnesses. Bok (85) had heart surgery three times in the past three years and still had heart problems, a severe gastroenteric disorder, high blood pressure, and migraines. She said that she asked God to take her to the heaven without pain anymore. This was her last hope. Kyong (76) also showed unreceptive attitudes toward the computer, saying “I’m not using the computer. As an old person, there is no need for it. I won’t do it again anymore. That’s true!” She mentioned that “Since my health is very bad, I’m not going to use the computer. Health is the most important thing in late life for someone like me, an older person. It is true. All the older people say that.” She was suffering from arthritis, high blood pressure, migraines, and cataracts. She was planning to get cataract surgery soon. In her opinion, health was the major concern in her situation, and therefore she wouldn’t use the computer anymore. The third participant, Jong (85), also contended that the most important issue in his late life was keeping his current health condition. He had three major surgeries. Those were significant life experiences in his late days which made him believe his health condition dramatically weakened day by day after the surgeries. Consequently, he had to use an electric wheelchair all day and carry an oxygen tank. He said that “my health condition is very bad. It is hard for me to breathe and see. I cannot see objects, even with glasses. I had to have surgery on my eyes. Nowadays, everything is a nuisance. I’m only waiting for the day of dying.” Thus he decided to quit using the computer, along with all the other activities that seemed to aggravate his health, such as gardening, listening to music, and going shopping.
The second attribute was that the participant thought that his or her own health recovery was impossible. Participants (Jong-85, and Bok-85) who believed that their health condition was very bad and there was no possibility to recover tended to show unreceptive attitudes toward the computer. Most of the older adults were suffering from more than one illness of differing severity. However, when they thought that their health condition would not recover, they seemed to give up many things around them and view the computer as hopeless. Jong and Bok were the right people who believed they were in the final stage of their lifetime. Thus, they didn’t want to think about using the computer at all. Jong expressed that “My health is very bad. I know that. I am only waiting for death, even though I’m not sure when I will die. After I fell down and had heart surgery, I became like this, sitting in my wheelchair all day. I have no hope to recover like before I fell down.” It must be a nightmare to admit that there is no hope to recover. Having that self-evaluation seemed to play a key role to stop or continue using the computer.

Participants who were completely physically dependent on others tended to have unreceptive attitudes toward the computer. Their physical dependencies seemed to make these persons unwilling to do something new or challenge themselves, including learning the computer. The participants expressed that they couldn’t do anything at all without others’ help because of their health conditions.

Sun (78), Bok (85), Kyong (76), and Jong (85) were the participants who were physically dependent on their descendents, social workers, or volunteers. All of them had issues which prohibited them from learning and using the computer. They were not physically healthy enough to go shopping, go on trips, or even go to the hospital by themselves. To go anywhere they needed helpers at all times. In their consideration, they might not want to put a burden on their care givers, so that they shunned asking for additional things like learning and using the
computer. But there was a question that using a computer was an irrelevant issues with caregivers. They could use it at the senior daycare center or in the computer room in their apartment. Even though having access to the computer seemed somewhat easy for them, they didn’t want to use it. However, as they admitted their physical dependency to others, they didn’t want to burden them with additional requests.

As a negative case, participants who were generally healthy tended to have enthusiastic and receptive attitudes toward the computer. Seung (66), Sam (75), Jung (66), Chae (67), Ok (80), and Ae (70) described their physical health as generally fine. When questioned about their health, they answered that they were not suffering from severe illness. For example, Seung said “My age is 68 in the Family Registration. However, I am very healthy. I don’t take any medicine like other older adults must do. I am feeling that I’m very healthy. Thus, I’m willing to do what I want even at this age.” Like Seung, participants who were healthy seemed to manage their late lives with an energetic, active, and healthy mind in general, so they could easily use the computer.

All of them showed enthusiastic and receptive attitudes toward the computer. It seemed that older adults’ physical health played an important role to challenge and utilize technologies like the computer. Physical healthiness might give them self-readiness to learn something and experience further things.

Gender was another factor that influenced participants’ formation of their attitudes toward the computer. But, not surprisingly, it was female participants who considered gender to be significant. For example, Kyong (a 76-year-old woman) thought that there were only male-oriented programs on the computer, so it was not interesting to her. In the actual situation, male Korean-American older adults played card games such as western trump and a Korean card game
called Hwatu at the senior center’s computer. Kyong thought that the western card game was male-oriented. Therefore in her opinion it was irrelevant for females to do it. She saw that most of the males who frequently played the card game at the center seemed to have fun, but as a female, she didn’t feel any interest for the game. Even when she used the computer, she played games, but they were not interesting at all. The traditional Hwatu game was also recognized as a game for males. Both of the games were considered as gambling for men and unsuitable for women. In Korean society, it is taboo for women to gamble. People tend to think that a gambling woman will destroy not only her life but also the lives of the whole family. This traditional concept still shaped female participants’ attitudes toward computer games, and led them to perceive the computer as male-oriented. Therefore, Kyong became unreceptive toward the computer, saying that “The computer is for men, not women. Males were playing the computer games and they seemed to have fun. But I don’t think that’s interesting at all. Why males do like those games on the computer? I don’t understand it. The computer is for men, not women. So I don’t like it and I don’t want to use it.”

On the other hand, one participant preferred to learn and use female-oriented computer games. For instance, Ok (a female participant) had receptive attitudes toward the computer, wanting to learn and use through female-oriented programs such as programs with beautiful flowers and colorful pictures. These could be games, drawing pictures, or making puzzles. She didn’t know what kinds of computer games and programs were available until she saw them on her daughter’s computer. While she also labeled the computer card game as male-oriented, she believed that the beautiful flowers and colorful picture games were female-oriented. She was very happy to discover the kinds of female-oriented computer games and programs that she could learn and enjoy, and she wanted to learn them as soon as possible. She even said that “I
saw beautiful pictures on the computer, and women must like it. Yes, I like those kinds of pretty and colorful images for women. I want to learn and use those. They were so beautiful, and I like to do those things. You know that women like pretty, colorful, and small things! Surely I can do this on the computer. That’s why I like to learn and use them.” At this point, the participant recognized that the computer had male-oriented and female-oriented contents. However, this gender-related orientation of the computer seemed to affect participants’ attitudes toward the computer.

Intellectual curiosity was the third obvious factor that participants perceived as an affective factor for their attitudes toward the computer. For example, intellectual curiosity was a perceived factor by Chae (67) to partly explain his enthusiastic attitude toward the computer. Chae run a laundry six days a week from 7 a.m. to 7 p.m. Moreover, he was always busy with his job and church work, even on the weekends. Yet, he made time to learn and use the computer. He bought a book about computer learning and got help from the young people in his church. Throughout his lifetime, Chae had a strong intellectual curiosity to learn about what interested him. When he wanted to learn something, he usually read books in that area. Therefore, he constantly read books, at least one or two books per week, since his adulthood. He said that “I gain what I want to learn from books. Yes, I can get information from a book. Books are teachers for me. I learned a lot about various aspects of religion, literature, history, education, social issues, and the computer too. When I feel I want to learn something or am curious about something, I find myself reading books to learn about it. Learning the computer might be the same way, because I was curious about it. I know that I can get unlimited information from the computer. As I told you before, I’m a very curious person. And the computer must be the one that can help me. Even though my computer skills at this point aren’t good, I can learn and
utilize them freely someday. And it can help me to fulfill my intellectual curiosity in numerous ways.” Like the participant, having intellectual curiosity played an important factor to cause the person to sit in front of the computer and use it with an enthusiastic attitude.

Another perceived factor was peers dropping out from the computer training sessions. This made participants become unreceptive toward the computer. For example, Kyong (76) and Jong (85) participated in a computer training session in a daycare center several months before this study. Their classmates’ dropping out of the computer training (environmental element of the learning situation) made them to be worrisome and anxious (psychological point of view) about computer training. When they started the computer training session, there were fifteen older adults who were interested in learning the computer. However, as time went, some of them began not to show up. When there were many learners in the beginning of the session, they were happy to be there, sharing what they learned and having fun with the progress of learning and making mistakes. Also, those sessions were full of joy, laughter and applause. However, along with their classmates’ quitting the computer training day by day, some felt uncomfortable and pressured by the instructor to continue participation. In their opinions, they were not good learners because they were slow to learn new things and apply them.

Kyoung (76) expressed that “Experiencing my peers dropping out of the training session made me anxious about the quality of the computer itself and made me uncomfortable sitting in the class. Is the computer a bad thing? Is it too difficult for me to learn the computer? Maybe they are not showing up to the session because the computer is not good for older people. Also, it is a burden for me to keep participating in the sessions. The experience made me think that the computer is not a good thing for older adults.” She became anxious about the computer itself and
began to have unreceptive attitudes toward the computer. It seemed important to consider companionship with peers among the reasons for older adults’ learning the computer.

The religious faith-Christianity affected participants’ attitudes toward the computer. Participants who thought that the practice of Christianity as most important in late lifetime tended to be unreceptive toward the computer. For example, Sun (78) expressed that “I don’t want to waste time for using the computer because I have to read and memorize the Bible. It is important for me to do that because I’m a Christian. As a Christian, we should spend time doing that. And I think I am blessed with memorizing the verses of the Bible because I’m good at it compared to others. All of my friends really enjoy watching Korean soap operas on video tapes. Even though I know it is interesting and fun watching Korean dramas, however, I don’t watch them because I need time for reading and memorizing the Bible. Thus I won’t learn the computer.” She had unreceptive attitudes toward the computer for the practice of Christianity. According to Park (1996), the rate of Christianity among the Korean-Americans in the United States reached 94%. This statistics was interpreted as Korean Americans were highly adhesive to Christianity. Moreover, Christianity seemed to play an important role for older adults because their communities were bounded because of their attending church.

The participants’ types of temperament, introverted temperament, affected their attitudes toward the computer to be enthusiastic and receptive. The introverted participants were the quiet persons who were more interested in their own thoughts and feelings than in spending time with other people. For them, the computer was a useful tool for spending time with interesting and fun content. Therefore, they thought the computer was useful and necessary in their life. For example, Hae (66) expressed that “I like to spend time alone. I don’t like being engaged in group activities or spending time with others. Thus I found myself sitting in front of the computer tapping the
keys. I like the computer very much. It is part of my daily living.” “I even learned the computer by myself without others’ help. However, nowadays I try to find others’ help.” She tended to have enthusiastic attitudes toward the computer.

Another participant, Ok (80), enjoyed being intentionally solitary. She also disengaged in group activities but enjoyed computers at the senior center. She said, “My daughter and I are the loneliest persons in the world because we disconnected from our relatives in Korea and live here in the United States. The reason was that my daughter married an American in Korea. After migration to the United States, I still enjoy being alone and using the computer even at the senior center. I don’t like to do things with others. I just sit and use the computer. When I do so, I feel free and happy.” “The computer is very important for me. I like it very much. It is very good in many ways. It is very convenient too. I feel good when I do the computer. It is marvelous.” Mostly introverted female participants tended to interest in computers and had receptive and enthusiastic attitudes toward the computer.

Latent Factors

Latent factors are those that, from my observation seemed to have affected participants’ attitudes toward the computer but which had not been emphasized by participants. These latent factors constituted invisible structures that seem to predispose participants to have certain attitudes toward the computer. These latent factors are: participants’ socio-economic status (SES) and the type of immigration to the United States.

Participants’ SES when they were young affected their attitudes toward the computer. For example, most of the participants who were in a high SES when they were young (i.e., they had achieved higher educational levels—more than a college degree, had more access to computers while they were in college or in the workplace, held white-collar jobs, and enjoyed
relatively higher earnings compared to other participants of the study) had receptive and/or enthusiastic attitudes toward computers.

As an example, Seung (66) was born in Chungchong area in the middle of the Korean peninsula as a wealthy farmer’s son. To get better educational experience, his parents sent him to Seoul, the capital city of Korea, when he was eight years old. He was always a top-ranking student all through his school days. He entered one of the high-ranking private colleges in Korea, Yonsei University, majoring in Economics. His parents were very supportive of him for all occasions, because they were wealthy and able to give support. After finishing college, he passed his CPA exam in Korea and got a job with high salary. He never experienced economical difficulties in life because of his parents’ wealth and his impressive educational background. Later, he immigrated to the United States and passed the CPA exam there. Since he worked as a government accountant, he naturally started to use the computer. Using the computer became part of his daily life and he never thought of his life without it. He didn’t recognize that his high SES as a young man led him to have a high educational background and more exposure to the computer. It finally resulted in his enthusiastic attitude toward the computer. The process of his enthusiastic attitude development toward the computer might derive from the nature of being part of computer in his life, not only at the workplace but also at home. He mentioned that “I started to learn the computer in my college days but those computers were only huge, inconvenient ones. However, when I started to work as a CPA not only in Korea but also in the United States of America, I always used the computer. Sure, I use it at home in many ways, getting travel, medical, and everyday life information. And now, it has become a part of my life. I cannot imagine not having a computer myself. It became a part of my life and it would be very strange if I don’t have the computer anymore.” His description showed that the computer had
become a useful and invaluable tool in his work environment and everyday life. He didn’t make any additional effort to use the computer, but the computer seemed to naturally become a part of life. The same case existed for other participants such as Won (70), Sam (75), and Jung (66).

As a negative case, participants who had low SES when they were young tended to have unreceptive attitudes toward the computer. For example, Jong (85), Kyong (76), and Sun (78) were in a low SES when they were young. Jong was born in an agricultural area to a poor farmer’s family. He had two brothers and three sisters. He had to help his parents’ farming from an early age. He mostly spent time in the field which was borrowed from the family’s landlord. Thus, he barely finished elementary school. Since his educational background was seemingly lows, when he had grown up he couldn’t get a well-paid job and instead performed manual labor for the railroad. He worked as a trackman for twenty years. He described the work as very hard and his work environment was not ideal. They didn’t have proper equipment to fix the railroad. Therefore, all work was performed by physical labor which made him desperately tired everyday.

After twenty years of such work, he quit this job and became a farmer. Jong said that farming was easier than the previous work, but he couldn’t make enough money. From his vocational experience, he never thought about the chance to learn how to use the computer, or even the existence of it. Only when he became an older adult as a foreigner in the U.S.A. was he introduced to the computer in a senior center and tried to learn it. Being an older adult and the sudden trial to be familiar with it seemed a burden for him. Therefore, he had an unreceptive attitude toward the computer in late life. Having a low SES when he was young made him unfamiliar with the computer through adulthood and led him to perceive the computer as not relevant to his life.
SES, when the participants were young, had sub-factors which affected participants’ attitudes toward the computer. Those were educational background and types of occupation. In terms of educational background, the data showed that the more educated participants were the more receptive/enthusiastic and more willing to learn/use the computer. The college graduates, high educational background participants, (Seung-66, Sam-75, Jung-66, and Ae-70) were receptive/enthusiastic and willing to use the computer in their older adulthood. Having a higher educational background led them to have white-collar jobs which led them to work with computers in their daily lives or to use the computer for life convenience. They showed receptive attitudes toward the computer, such as ‘Convenient tool for modern life’ (Seung, Sam, Jung, and Ae), ‘A necessity in modern life’ (Won, Sam, and Jung), and ‘I like the computer very much’ (Sam, Jung, and Ae). They expressed more details about computers, saying that “The computer is a career development tool” (Seung and Sam). Moreover, participants with higher educational backgrounds encouraged others to learn and use the computer. For example, Seung, Jung, Sam, and Ae encouraged their spouses, friends, older church members, and peers to learn about the computer and use it because they thought that there were lots of benefits.

However, the less educated participants with middle-to-low education backgrounds (high school graduates or less) were unreceptive and unwilling to learn the computer. Their educational background led them to have blue-collar work experiences which naturally led the computer to be irrelevant and unfamiliar to them. They expressed negative attitudes toward the computer, saying that “The computer is a nuisance” (Sun and Kyong), “The computer bothers me” (Jong), “I dislike the computer” (Sun, Kyong, and Jong), and “I don’t want to use it anymore” (Jong, Sun, and Kyong).
In terms of participants’ types of occupational experience, it derived from their level of SES when they were young, because the higher SES tended to have white-collar occupations compared to low SES participants. Participants’ occupational experience was categorized as ‘white-collar job,’ ‘blue-collar job,’ and ‘white-to-blue collar job.’ The white-collar job was defined as those emphasizing obvious mental abilities, such as professionals or certain office workers. I say “obvious” because I believe that all jobs require some mental ability, but such mental abilities are not always recognized. Three participants (Seung-66, Sam-75, and Jung-66) had white-collar job experiences. Seung was a government accountant, Sam was a pastor, and Jung was an engineer.

Blue-collar jobs were defined as those that emphasized and rewarded physical labor. The blue-collar job workers used their bodies to produce profits. Most of the participants (Sun-78, Keum-65, Chae-67, Kyong-76, Jong-85, Un-78, Hae-66, and Yem-71) had blue-collar jobs in the United States. Keum, Chae, Hae, and Yem worked for a laundry or sewing factory. Jong and Un worked for grocery stores owned by their sons.

A white-to-blue-collar job referred to a change of vocational types from a white-collar job to a blue-collar job. Many participants in my study experienced a vocational transition (regardless of their intention) from white-to-blue-collar jobs when they immigrated to the United States. For example, Won (70) and Jae (71) were college graduates in Korea and worked as CEOs in big companies before they migrated to the U.S. However, when they came to the United States in their middle age, they had to work at blue-collar jobs such as cashier, carpenter, and Laundromat worker, regardless of their previous career. The language barrier, that is, their lack of English skills, was the main reason for this transition from white-to-blue collar jobs. With the change in vocation came loss of self-esteem. When they started working as a cashier or at a
Laundromat, they could not look into the customers’ eyes, because they felt ashamed about their change of vocational type. Once they were in the United States, they never returned to white-collar jobs.

Regarding vocational type, the data revealed that the participants who had blue-collar jobs in Korea or in the United States showed all the four attitudes toward the computer: enthusiastic, receptive, ambivalent, and unreceptive. The nature of blue-collar vocation didn’t provide them a computer at the workplace and not all of them had enough time to learn or use the computer in their free time. However, individuals who had a personal interest in the computer tended to learn and use it in their spare time. Certain people tended to have enthusiastic or receptive attitudes toward the computer when they experienced the benefits of the computer personally.

For example, Chae (67) was a blue-collar worker both in Korea and the USA. In Korea, he worked as a carpenter until he moved to the USA. After arriving in the USA, he worked as a carpenter and a laundromat owner. While he was working as a blue-collar worker, he didn’t have the chance to use and learn the computer at his workplace. However, several years before this study, he became aware that the computer was a convenient tool for documentation at church. Naturally, he recognized some practical benefits of the computer. The blue-collar workplace didn’t give him the opportunity to recognize practical usages of the computer. The work environment of a carpenter didn’t provide this at all, and the laundry environment did not either, even though he ran his own business. However, after he learned that the computer was a useful tool for getting various information, he became enthusiastic toward the computer and wished to learn. At the moment of this study, he was excited to learn and use the computer, even buying a computer learning book for himself.
Hae (66) worked as a seamstress in the USA for a long time. She didn’t like the kind of work because it was very hard for her to support her family as a single mother. However, there were no other options for her. The nature of the blue-collar work didn’t give her a chance to confront the computer. She only saw her sons using the computer at home to study. After she became an older adult, she worked for a senior center as a part-time worker. There, she learned the computer and used it. She was interested in the computer and made efforts to learn more. Now she became an everyday computer user, having receptive attitudes toward the computer. She used the computer for at least an hour per day, searching for information, emailing, and writing out documents.

Won (70) was a blue-collar worker at the time of this study, as a laundry owner. He was working all day, getting tired, and when he went home he would see that his son was using the computer. The computer seemed useful and easy to learn, but he didn’t begin to try it. He knew the general functions of the computer from his college days. Also, he learned the various ways that people use the computer. However, he didn’t think about learning this by himself. Instead of learning the computer for himself, he asked his son to search for certain information on the web when he needed help. For example, he let the son find out information about travel, medicine, Korean news, and more. Won knew that the nature of his work didn’t require him to use the computer at all. He said, “Using the computer at my workplace wouldn’t be helpful at all. It makes the work more difficult if I use the computer. The nature of my work is inappropriate for it.” His recognition seemed clear in terms of practical usage of the computer. Thus, he showed ambivalent attitudes toward the computer, acknowledging the usage and benefits of the computer but showing an unwillingness to use it.
Jong (85) worked as a blue-collar worker whole through his life both in Korea and in the USA. In Korea, he worked for the Korea Electric Company for twenty years, one year for a pharmaceutical company; he also worked as a farmer. After coming to the USA, he worked for a grocery store and as a parking lot attendant at a Korean restaurant. He remembered that he usually worked during the night with little pay, but enjoyed the work. He didn’t have the chance to come across the computer in his work environment. After he became an older adult, attending a senior center, he started to learn how to use it. He concluded that the computer was not interesting because it gave him headaches, was annoying, and bothered him a lot. He said that the computer was not relevant for him, because it was very harmful for his health. He had unreceptive attitudes toward the computer.

However, participants with white-collar jobs (Seung-66: a government accountant, Sam-75: a pastor, and Jung-66: a Chemistry professor) had many opportunities to learn and use computers during their schooldays and workplaces. In fact, all the participants who held white-collar jobs in the United States demonstrated only enthusiastic attitudes toward the computer. The nature of the white-collar job provided them the computer as an inevitable tool for work but also for everyday life for information searching, communicating with others, documentation, and information storage.

For example, Seung (66) was a CPA in the USA. He was a government accountant for twenty-six years and he had used the computer for his work. After retirement, he became a pastor at the age of 62 and his new work required him to use the computer constantly. He said, “The computer was a very useful tool for both my jobs of CPA and pastor. To calculate, separate, arrange, analyze, and interpret complex numbers and items, we should learn and use the computer. It was very important for me to be a fast learner and user of the computer. I was better
at it than my coworkers. I really was a fast learner. After I became a pastor, the computer was a necessity. I use it everyday. Everyday. I cannot imagine living and working without my computer.”

For all of them, the computer became a necessity of their work and life. Sam (75) was a pastor who used the computer throughout his adulthood. He said, “I thought that the computer was a useful tool for my work. So I learned to use it. It is needed to manage church work. For instance, the computer is useful for the preparation of sermons, collecting information, church management, and communication with church members. I always use email, everyday. It is very convenient to use the email. I can save time. It is so fast. Sometimes, I email my grandson in Korea. The computer helped me to become close with him. We talk frequently via email. If there were no computer, how could we become close like this? It is very precious. I use internet everyday, watching CNN news and Korean news, and searching for information about health or travel. The computer is a very useful thing in my life.”

Jung (66), as a professor, used the computer for his work and everyday life. He said that “I cannot imagine my life without the computer.” He showed his enthusiastic attitudes toward the computer, saying that “The computer is a necessity in modern life. The computer is very, very important for me to manage my life. I’m going to use it as long as I can until I die. And I recommend others learn and use it, even if they are older adults. It is very beneficial to use it. There is no life without the computer.”

Another latent factor was type of immigration to the United States. The types of immigration were as a professional worker, blue-collar worker, student, and parent of adult children. Participants who entered the United States as professional workers and students showed enthusiastic and receptive attitudes toward the computer, while others showed ambivalent and
unreceptive attitudes toward the computer. For example, Seung (66) entered the United States as a CPA as a professional worker in 1971. He worked for the US government as an accountant until he retired. Working as a government accountant, he started to learn and use the computer, because the company started to adopt the computer. His was the first generation to use the computer with a punch card to record statistics for government resources. As computer software became more developed, he used a computer keyboard rather than punch cards. He thought that the computer was necessary in the workplace because the amount of work was too much to handle by hand. He became used to using the computer and it became a part of his life. Finally, he had enthusiastic attitude toward the computer and encouraged others to learn it.

The participants who entered the United States as students, Sam (75) and Jung (66), also had enthusiastic attitudes toward the computer. Sam studied for his master’s degree in the United States, and later on he attained a doctoral degree in theology. From his school days, he learned the computer and used it through his life. In Jung’s case, he also finished his master’s and doctoral degree in the United States. He worked for a college in the United States as a professor, using the computer as a necessity. He never thought about working without a computer and had an enthusiastic attitude toward it.

On the other hand, participants who entered the United States as blue-collar workers and parents of adult children tended to have ambivalent and unreceptive attitudes toward the computer. For example, Un (78) entered at the age of 53 as a blue-collar worker for a grocery store. He worked as a salesman. He didn’t expect to be a salesman at a small grocery, because he was a local government officer back home in Korea. In the shop, he sorted, displayed, and sold produce and products all day, from early in the morning to late at night, six days per week. The work was very tough for him and he never had a chance to access the computer at all. When he
became an older adult and attended the senior center, he came across the computer but never tried to learn it. He was at once interested in, and fearful of, learning the computer. He thought that he was too old to learn and use the computer. Thus he didn’t yet decide to learn it but was a potential learner of it in a short time. I identified his attitude toward the computer as ambivalent.

Another participant, Jae (72), came to the United States as a blue-collar worker. He worked for a gas station and supermarket. He couldn’t enjoy this work experience because of the physical work nature which he was unfamiliar with in Korea. When he was in Korea, he was a CEO of a popular company. He tried to be familiar with this kind of work in the USA; however, he couldn’t. He disliked his blue-collar job and retired as soon as he became an older adult. Until then, he didn’t have a chance to learn the computer and had an ambivalent attitude toward the computer, showing willingness to learn it someday, but the exact period was not specified. He considered the computer as a symbol of intellectuals because when he remarked on his friend using the computer, he was envious, saying “The computer is for the intellectuals. My friends who use the computer are all intellectuals. While I get information from the Korean newspaper, my other friends use the computer for their news. It seems very useful and beneficial. I know that the computer is very useful. However, since I have physical difficulties I cannot concentrate on the computer. This is the problem. However, when I became healthy, I want to learn it.”

As another case, participants who entered the United States as parents of adult children tended to have unreceptive attitudes toward the computer as older adults. Recent immigrants who entered the USA as older adults usually came here because their adult children were in the USA. Since most of the adult children worked all day, older adults naturally became in charge of child-rearing. Therefore, they became homebound all day with their grandchildren. For them, rearing their grandchildren seemed an important role which had to be very careful and successful.
Several years later, they suddenly found themselves with empty hands and gray hair, without having any friends or English-language abilities. The computer seemed an object for others, not themselves. This kind of experience made them have unreceptive attitudes toward the computer. For instance, Bok (85) came to the United States as a parent of adult children to take care of her grandchildren. Her children invited her and she took care of her grandchildren in the United States because her adult children had to work. She regretted spending her time only for grandchild-rearing in the United States. She said that she had chances to learn English, computers, and other things when she came to the USA; however, she spent all day with her grandchildren. She said that “I only thought about child rearing. I thought that was my only role here in the USA. There were chances to learn if I only paid around twenty dollars a month. However, I couldn’t participate because of my grandchildren. I regret it now. I should have saved some time for doing and learning those things. I really regret it.”

On the other hand, immigration as an older adult of adult children usually caused the participant to work for their children’s business without having access to the computer. It seemed a natural way of helping their adult children. They didn’t think about other kinds of work until they felt they were physically unable to manage that kind of work anymore. Family-bound type of work seemed natural for the immigrants to save their children’s wages. This might be a major reason for parents’ engagement for their adult children’s businesses. This kind of work environment made older adults lose their free leisure time. Thus, participants didn’t have chances to learn the computer and became familiar with it.

For example, Jong (85) also was invited to the United States by his adult children when he was 67 years old. Since he was an older adult already, he helped run his son’s grocery business. After his arrival in the United States, he naturally started to help the shop. He said that
“As a father, how can I ignore my son’s working hard? I wanted to help them with my hands as long as I could. So, I lost lots of chances to learn something, enjoy life, and even get other jobs. I think this is a kind of Korean mindset, doing our best as parents. Then one day, I found out myself physically unable to continue to help my son’s shop. Then I got a part-time job working at a parking lot of a Korean restaurant. This kind of work didn’t give me a chance to learn and use the computer. So, what can I say? I became unfamiliar with it. If I didn’t work and spend whole days, doing my work, I might have learned to use the computer. However, now I don’t want to use the computer. That’s not for me.” Both Bok and Jong who immigrated to the United States as older adults showed unreceptive attitudes toward the computer.
CHAPTER 5.
DISCUSSION AND CONCLUSIONS

This chapter presents the summary of the findings and discusses how the findings contribute to the existing theories and the field of practice.

Summary of the Findings

The summary of the findings consists of the participants’ attitudes toward computers and factors affected.

Table 3. Participants’ Attitudes formation and factors

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| Computer Presentation & Attitude Change | | |
|----------------------------------------| | |
| Upward                                | | |
| Status Quo                            | | |
| Downward                              | | |

<table>
<thead>
<tr>
<th>Enthusiastic Abundant</th>
<th>Receptive Adequate</th>
<th>Ambivalent Adequate</th>
<th>Unreceptive Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enthusiastic Adequate</td>
<td>Receptive Adequate</td>
<td>Ambivalent Adequate</td>
<td>Unreceptive Adequate</td>
</tr>
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</table>

<table>
<thead>
<tr>
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<th>Receptive Insignificant</th>
<th>Ambivalent Insignificant</th>
<th>Unreceptive Insignificant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enthusiastic Counterproductive</td>
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<td>Unreceptive Counterproductive</td>
</tr>
</tbody>
</table>
Perceived Consequences of Computer Use

Participants of this study showed a process of mapping a ‘perceived consequences of computer use’. There were three factors: a) computer usage b) benefits of computer use and c) harms of computer use.

The participants’ computer experience emerged into seven groups: a) communication tool b) gathering information c) having fun d) storing information e) developing self f) purchasing merchandise and g) helping others.

Whether or not they had had direct computer experience, their perceived benefits resulting from computer use formed into four modes: a) convenience b) economical benefit c) social recognition and d) psychological satisfaction.

Also, participants’ perceived harms associated with using the computer were grouped into three modes: physical discomforts, unfriendliness with others, and disrupting the priority of daily activities. Those three factors, computer usage, benefits of computer use, and harms of computer use, affected participants’ formation of perceived consequences of computer use for those four groups: a) abundant b) adequate c) insignificant and d) counterproductive.

*Abundant consequences* referred to the various and numerous effective benefits of computer use in large qualities for older adults. *Adequate consequences* referred to the sufficient, satisfactory, or proportionate consequences of using the computer. *Insignificant consequences* referred to the unimportant, insignificant, and meaningless consequences of computer use.

*Counterproductive consequences* referred to the tendency of computer use to hinder the achievement of a goal or produce the opposite of the desired effect, such as malfunctions or side effects. There were two attributes under it: content-oriented reasons and person-oriented reasons. Content-oriented reasons were harmful content such as sexual, violent, and fraudulent associated
with the computer. Person-oriented reasons caused physical discomfort such as sore eyes, headaches, numbness, and body nuisances.

Participants’ self expressed tendency toward the computer formed four attitudes: a) enthusiastic b) receptive c) ambivalent and d) unreceptive attitudes toward the computer. *Enthusiastic attitudes* referred to having or showing strong emotional, perceptual, motivational, and behavioral tendencies toward the computer. They had strong interests, admiration, deep satisfaction, beneficial recognition, or great eagerness toward computers with an intention of using them and encouraging others to learn.

*Receptive attitudes* referred to the participants’ tendency of acceptance of computer use and their consideration of computer use as good. They also preferred to use the computer and were satisfied with using the computer. Their satisfaction of using the computer was based on very self-oriented enjoyment of computer use.

*Ambivalent attitudes* referred to having both receptive and unreceptive attitudes toward the computer such as using, not using, acceptance, rejection, satisfaction, un-satisfaction, consideration of computer use, or no consideration of computer use. Even though they perceived various consequences, benefits, and harms of the computer, they still didn’t decide whether to accept, use, like, or dislike.

*Unreceptive attitudes* referred to the tendency to be doubtful, negative, rejecting, unwilling, uncertain, unfamiliar, and dubious of the computer itself and its personal use. Participants’ reasons for having unreceptive attitudes were bad health conditions, negative self-image of old age, loss of cognitive abilities, and religious reasons.

Based on the participants’ “consequence of the computer use” and “attitudes toward the computer”, profiles of the participants’ attitudes were formed as below the 4x4 matrix.
### Table 6. Consequence of Computer Use & Attitudes

<table>
<thead>
<tr>
<th>Consequence of the Computer Use</th>
<th>Abundant</th>
<th>Adequate</th>
<th>Insignificant</th>
<th>Counterproductive</th>
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</thead>
<tbody>
<tr>
<td><strong>Attitudes Toward The Computer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>Type 1.</td>
<td>Type 2.</td>
<td>Type 3.</td>
<td>Type 4.</td>
</tr>
<tr>
<td></td>
<td>Enthusiastic &amp; Abundant</td>
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<td>Enthusiastic &amp; Insignificant</td>
<td>Enthusiastic &amp; Counterproductive</td>
</tr>
<tr>
<td></td>
<td>Seung (66), Sam (75), Jung (66)</td>
<td>Chae (67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receptive</td>
<td>Type 5.</td>
<td>Type 6.</td>
<td>Type 7.</td>
<td>Type 8.</td>
</tr>
<tr>
<td></td>
<td>Receptive &amp; Abundant</td>
<td>Receptive &amp; Adequate</td>
<td>Receptive &amp; Insignificant</td>
<td>Receptive &amp; Counterproductive</td>
</tr>
<tr>
<td></td>
<td>Hae (66)</td>
<td>Ok (80), Ae (70)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambivalent</td>
<td>Type 9.</td>
<td>Type 10.</td>
<td>Type 11.</td>
<td>Type 12.</td>
</tr>
<tr>
<td></td>
<td>Ambivalent &amp; Abundant</td>
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<td>Ambivalent &amp; Insignificant</td>
<td>Ambivalent &amp; Counterproductive</td>
</tr>
<tr>
<td></td>
<td>Won (70), Keum (65)</td>
<td>Un (78), Jae (72), Yem (71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unreceptive</td>
<td>Type 13.</td>
<td>Type 14.</td>
<td>Type 15.</td>
<td>Type 16.</td>
</tr>
<tr>
<td></td>
<td>Unreceptive &amp; Abundant</td>
<td>Unreceptive &amp; Adequate</td>
<td>Unreceptive &amp; Insignificant</td>
<td>Unreceptive &amp; Counterproductive</td>
</tr>
<tr>
<td></td>
<td>Sun (78)</td>
<td>Bok (85)</td>
<td>Kyong (76), Jong (85)</td>
<td></td>
</tr>
</tbody>
</table>

#### Computer Presentation and Attitude Change

Participants showed various attitude changes after two computer presentation sessions. They showed an upward change—from unreceptive to receptive attitude, a status quo-no attitude change within maintenance quo, and a downward change—from ambivalent to unreceptive attitudes. Applying Jean Piaget’s assimilation and accommodation theory, participants showed both cognitive changes. In terms of assimilation, participants maintained the status quo as an ambivalent attitude toward the computer. This means that outer new information about the computer didn’t affect participants’ own attitudes toward the computer. In terms of accommodation, a participant who had an unreceptive attitude toward the computer changed his attitude to a more receptive attitude. In the process of it, new information about the computer...
played a role for him to rethink the computer as practical and convenient to overcome his physical difficulties.

In terms of downward change, new information played a role for them to think that the computer was a complex and difficult gadget for older persons and they felt they could not learn to use it. Thus they tended to give up on learning it.

Building Substantive Theories

All three factors, computer experience, socio-demographic factors, and psychological factors, affected participants’ formation of attitudes toward the computer-enthusiastic, receptive, ambivalent, and unreceptive. The details will be described in the following specific section.

In terms of dimension of attitude, participants used both affective and behavioral dimensions to describe their attitudes. However, behavioral dimensions seemed to be the decisive ones which formed each participant’s attitudes toward computers. Most of the participants usually used numerous affective terms to express his/her attitudes toward computers. For example, Ok (80) used various affective terms to describe her receptive attitudes toward the computer as fun, hard to learn, good, marvelous, and convenient.

In terms of behavior, participants tended to show finalized attitudes toward the computer, displaying willingness but also confidence about learning/using/quitting the computer at present and also in the future. It was recognized that even though participants knew the beneficial consequences of using the computer, they decided not to use the computer any longer, expressing the preeminence of the behavioral aspects. For example, Kyong (76) used the computer for two years for having fun with games. Although her affective attitude was receptive toward computers, she said that “computer is good as much as I know. I like it,” “I’m confident to use the computer,” “I don’t know any bad things about the computer,” and “the computer is convenient,” she
finalized her attitude toward computers as unreceptive: “I have no interest in the computer,” “I don’t want to use the computer anymore,” “I quit using the computer,” and “if I feel any obligation to learn the computer, I might do it. But I decided not to use it anymore.” Her finalized attitude toward the computer was unreceptive—driven not by affect but by behavior.

In the process of formation of attitudes toward computers, the existence of decisive factors was recognized. For example, several factors influenced participants to be enthusiastic or receptive toward computers. Those factors were gender (male), an introverted temperament, and high intellectual curiosity. Participants pinpointed that those factors made them to be familiar with computers, use them more, and enjoy using, learning and utilizing them.

On the other hand, two sub-factors—degree of religiosity and bad health— influenced participants to be unreceptive toward computers.

Those two factors were the most important values for participants to sustain their late lives. Older adults’ value systems tended to function as a very important standard for managing their lives. Also, Korean older adults tended to be more religious in everyday living and their faith played as an important role for them to decide what to do and what not to do. The other important concern was health status. Their bad health conditions made them unwilling to use the computer because it made them feel fatigued and experience various physical discomforts.

Interestingly, socio-demographic factors formed two modes, perceived and latent factor. The perceived factor referred to the factors that participants observed and perceived as affective ones, making them have certain attitudes toward the computer. Some examples are age, health condition, gender, intellectual curiosity, the learning environment, religious faith-Christianity, and types of temperament.
The latent factor referred to socio-demographic characteristics which were not recognized and emphasized by the participants. However, the latent factor influenced participants’ formation of their attitudes toward the computer. For example, SES when they were young and types of immigration to the United States were strongly embedded factors for their attitude formation. Most of the participants found the evidence or reasons of their enthusiastic, receptive, ambivalent, and unreceptive attitudes toward the computer from perceived factors. Thus the perceived factor explains why they had certain types of attitudes toward the computer in general. However, participants never knew the fact that their latent factors played an important role for them forming certain attitudes toward the computer. From the analysis of their own life stories, the researcher found strongly affective factors which led them to have certain attitudes toward the computer. Participants neither knew nor expressed the fact that their SES when they were young and types of immigration to the United are invisible causes for them to have those attitudes toward the computer. This might be one of the most significant findings of this study. The findings of this study confirm, challenge, or extend previous theories. In the study of attitudes toward computers, the age of older adult subjects was the most frequently examined factor by researchers and practitioners. This study confirmed the major researchers’ (Carter & Honeywell, 1991; Deollos & Morris, 1999; Festervand, 1994; McGregor, 1990; Morris, 1994) findings that there is a negative relationship between age and attitudes toward computers among older adults. These researchers agreed that it was derived from a lack of computer access. They concluded this was a cohort effect, that is, a certain age group shares different technologies and cultural experiences in their lifetime compared with other age groups.

However, the researchers (Carter & Honeywell, 1991; Deollos & Morris, 1999; Festervand, 1994) contended that age alone did not affect older adults’ attitudes toward computers. There were other
reasons, such as their personal experiences with computers or benefits from the computer, which were related to their age.

This study supports Mcneely’s (1991) finding that the computer was well-accepted by older adults when the application of computer learning was meaningful and are able to enhance their quality of life. When participants experienced the usefulness and meaningfulness of the computer for their actual lives, such as its convenience and speediness, they tended to be receptive and enthusiastic about the computer. For example, when the computer was considered a useful means to overcome body movement limitations (Un-78), the computer was a welcome tool for the participants to buy merchandise.

This study confirms that an individual’s physical health condition as he or she aged was the most influential reason for negative attitude formation. Participants of this study revealed that they became unreceptive toward computers because they experienced physical discomforts, such as sore eyes, dizziness, hand movement difficulties, and headaches. Many participants who were unreceptive or ambivalent toward computers (Sun-78, Bok-85, Kyong-76, Jong-85, Un-78, and Jae-72) contended that physical health was their major issue in life. For example, Jong (85) said “My health condition is the major issue that I am concerned about nowadays. Before several months ago, I could read and go anywhere. But now I cannot read or travel around the same as usual because I have a breathing problem. I cannot walk at all because of my leg problem. I have to take this electric wheelchair. I learned to use computers several months ago but I cannot do this anymore because I experienced sore eyes, dizziness, and headaches.” Thus he stopped using the computer, because it went against his priority of life, that is, maintaining his health.

With regard to gender, Krauss & Hoyer (1984) and McGregor (1990) demonstrated that men felt more comfortable with computers than women. The findings of this study confirm their
findings. However, cultural influence was perceived as an important sub-factor which influenced older Korean-American adults’ formation of attitudes toward the computer. Their gender role as female in Korean society made females think the content of computer was male-oriented, not female-oriented. Thus they tended to be unreceptive toward computers. Moreover, female participants wanted to learn female-oriented computer software which included colorful flowers.

Another sub-factor was cohort effect, because they were raised when Confucianism prevailed in Korea. Participants either yielded or lost the opportunity of education in favor of their older brothers. Thus they didn’t have earlier opportunities to access computers when they were young. This also made them think the computer was male-oriented, because males had more access to computers in their lives, and they believed that the computer had more male-oriented content.

In terms of educational background, this study opposes McGregor (1990) and McNeely’s (1991) findings that demonstrated no relevance between level of educational background and attitudes toward computers. In contrast, the findings of this study showed participants’ educational background was a very affective factor for them to be enthusiastic and receptive toward the computer.

Therefore, this study confirmed Bockman (1999), Deollos and Morris (1999), and Mustafa’s (2001) findings. The more educated older adults tended to have more receptive attitudes toward computers than their counterparts. As I described earlier, a participant’s educational background tended to be affected by SES (socio-economic status) when he or she was young and this played a key role in obtaining white-collar jobs with higher pay. White-collar jobs then led them to be more receptive toward computers. Significantly, participants’ SES when
they were young was the most important factor affecting their access to the computer through their lives, and consequently it affected their attitudes towards the computer, in general.

**SES When they were Young, Degree of Access to Computers, and Attitudes toward Computers**

As a whole picture, participants’ SES when they were young formed their attitudes toward the computer. The degree of access to the computer played as an important role. First, both high and low SES participants tended to show a bipolar phenomenon, receptive and unreceptive attitudes toward computers. The majority of the participants who were in a high SES tended to have higher educational backgrounds, white-collar jobs, higher pay, and more access to the computer than their counterparts, and finally tended to be receptive toward computers. One interesting mediator was the gender difference among them. This seemed to play out as a divergent point of attitudes toward computers, because all the male participants (Seung-66, Sam-70, and Jung-66) showed receptive attitudes toward computers, while female participants showed both receptive (Ae-70) and unreceptive (Bok-85) attitudes. Presumable reasons were the male participants’ goal-oriented active life management: career development and community development; while female participants showed passive life management focused on the negative side of self, such as bad health conditions and getting older (Bok-85).

For example, most male participants (Seung, Sam, and Jung) perceived older adulthood as a period to challenge new life activities, set new goals, and emphasize well-being. An exception for this is Jong (85). However, female participants (Bok and Ae) worried about their physical problems such as heart problems, digestion, high blood pressure, headaches, and dizziness.
Therefore, gender differences accounted for the female participants’ having unreceptive attitudes toward computers. For example, what could be the barriers for them to access computers compared to male participants? They could be sex roles as females—being subordinate and home-bound, late technological development, age, and limited work experience. Even though they had a high educational background (Bok received her high school diploma and Ae possessed a college degree), they could not learn the computer at schools nor at the workplaces because computers did not exist at that time. The fact of being a female seemed to play a key role in blocking them from learning the computer.

Participants who were in a low SES when they were young also showed both receptive (Oak-80, Chae-67, Un-78, and Hea-66) and unreceptive (Sun-78, Jong-85, and Kyoung-76) attitudes, having had only a low level of computer access. It was conclusive that the level of SES when participants were young affected their level of computer access when they became older. There was no one who had a high or average amount of computer access among the low SES participants. As we witnessed before, participants’ low educational background might be the answer.

The participants who were receptive toward computers tended to have several important decisive reasons such as introverted personalities (Oak-80 and Hea-66), intellectual curiosity (Chae-67), and finding practical use for the computer, such as an aid to overcome a physical disability (Un-78). All of them still had barriers to accessing the computer, such as lack of time (Chae-67), language barriers (Chae-67, Oak-80, and Un-78), and not having anyone who could teach them computer skills (Oak, Chae, Un, and Hae).

On the other hand, participants who were unreceptive toward computers tended to keep their own personal life activities a priority and focused on the negative aspects of themselves,
such as poor health conditions or aging. For example, Sun (70) was unreceptive toward computers and kept her priority of her daily activities as reading and memorizing the Bible. In her life, reading and memorizing the Bible gave her the feeling of being with God and practicing a Christian life. Even though she mentioned “The computer is very, very good. I cannot express that with language,” she decided not to spend time learning the computer because she wanted to keep her religion as her first priority.

Also, for unreceptive participants (Sun-70, Jong-85, and Kyong-76), age and health issues were other inhibiting factors for receptivity toward computers. All of them thought that they were too old to learn or use computers, because they had symptoms of bad health such as heart problems (Jong), headaches (Sun, Jong, and Kyong), high blood pressure (Kyong), rheumatism (Kyong), cataracts (Kyong), reading problems (Jong), eye problems (Jong), and knee problems (Jong). Jong said that his main worry was his health because of the symptoms and difficulties he was experiencing, such as falling down from his electric chair while traveling and reading difficulties. He thought that “Older adulthood is the period of throwing away what one has. It is the stage of giving up one’s life path, whatever it may be.” This mindset made such participants unreceptive toward computers.

Why was there no one who had high or middle computer access among the low SES participants when they were young? If they had high access to the computer in their earlier lives, they might have developed receptive attitudes toward computers, because all the participants who had high computer access had receptive attitudes toward computers. The possible reasons for not having high computer access might be their low educational background and blue-collar job experiences. All the low SES participants (Ok, Chae, Un, Hae, Sun, Jong, and Kyong) had low educational backgrounds and blue-collar jobs in Korea such as sewer worker (Sun), front
line engineer (Jong), factory worker (Jong), farmer (Jong), small business owner (Un), and carpenter (Chae). When they were working at those jobs, they did not have access to computers. Moreover, when they migrated to the United States, they also stayed in blue-collar jobs: baby-sitter (Sun), dry cleaner (Chae), janitor (Chae), parking lot manager (Jong), grocery shop helper (Un), sewer worker (Hae), and carpenter (Chae). These work experiences did not give them the opportunity to learn and use computers.

On the other hand, participants who were in middle SES when they were young (Keum-65, Jae-72, and Yem-71), showed only the low computer access, and this led to ambivalence toward the computer. Jae, Yem, and Keum expressed that their middle SES when they were young encouraged them to continue with higher education, so that Jae and Yem had finished college and Keum had finished middle school. They did not have access to the computer because this technology was not developed at that time, but their high educational background turned their SES from low to middle when they became adults. However, immigration to the United States turned their lifestyle to a lower level than before their immigration. Keum had to work as a janitor and dry cleaner. Jae had to work as a cashier at a supermarket. Yem had to work as a sewer worker. These downward changes in work were a big shock, and Jae and Yem became unsatisfied with life in the United States. While engaged in these jobs, they did not have any opportunities to learn or use the computer. After they immigrated to the United States as older adults, they took care of their children’s homes (Jae and Yem), raised grandchildren (Yem), or ran their own dry cleaning (Keum). All of them (Keum, Jae, and Yem) mentioned that if they were in Korea, they might use the computer like their friends back home. All cited reasons for not learning computers such as lack of time (Keum—still running her dry cleaning business), health problems (Jae and Yem), and no access to a computer institution (Yem).
Another interesting finding of this study was that the computer use influenced isolation as well as socialization. In terms of socialization, participants tended to be socialized in a virtual world such as online, but they also socialized within the actual community with their friends and neighbors. Of course, this kind of computer experience led them to be enthusiastic and receptive toward the computer.

However, computer use led one participant to be isolated from others. This finding challenges the prevailing idea that the computer makes socialization easier. Most educators in the area of gerontology emphasize older adults’ computer use as letting them engage in more active social life, communicating with others and encouraging them to participate in human relationships. However, a participant (Hae-66) of this study expressed she enjoyed being alone using the computer instead of socializing time with others. She thought that the computer was very convenient and beneficial. The computer was a friend for her to spend time with. Of course, she had an enthusiastic attitude toward the computer.

**Implications for Practice and Recommendations**

The findings of this study could have implications for the practice of computer training for older adults, mostly for administrators, instructors, and program planners of senior centers. First, program planners, administrators, and instructors must keep in mind that older adults might have one or multiple decisive socio-demographic factors which form their attitudes toward computers. For example, one of the participants had religiosity as a decisive factor for being unreceptive toward the computer, even though she acknowledged its benefits and usages. On the other hand, numerous participants had multiple socio-demographic factors such as high educational background, social recognition, white-collar vocational experience, and good health conditions as decisive factors to be receptive and enthusiastic toward computers. Therefore,
people who work for the computer training have to be sensitive enough to screen each older adult’s socio-demographic factors that could affect attitude toward computers.

Second, administrators, instructors, and program planners have to keep in mind that older adults’ attitudes toward computer are subject to constant change. Therefore, the constant evaluation of participants’ attitudes is necessary, followed by feedback to help them maintain receptive attitudes.

Third, some older adults’ self-held stereotypes about aging influenced their attitudes toward computers in an unreceptive manner. They stopped using the computer because they felt that they were too old to learn/use it. So instructors and administrators need to give a great deal of attention to this matter and encourage participants to see aging as one of the developmental processes to cope with through the use of computers.

Fourth, for older adults, health conditions played an important factor in forming unreceptive attitudes toward computers, so the program planners and instructors need to plan and provide appropriate time schedules and environments for computer training. For example, they could have short breaks or physical stretching time before or during the classroom to ward off physical fatigue. Also, the light system, height of table and chair, and technical supports: large screens with larger characters and enhanced sound systems, are needed to provide comfortable conditions for elderly computer users.

Five, participants’ religiosity played an important factor that led to unreceptive attitudes toward computers. There were mitigating circumstances such as the priority of daily living and stereotypes about the content of the computer, mostly from the Internet. Therefore, program planners and instructors need to provide introductory sessions about the productive roles of the computer regarding religious purposes before and during computer training.
Six, gender is one of the participants’ major socio-demographic factors that affect attitudes toward computers. Female participants tended to be unreceptive toward computers because they thought the contents of the computer were male-oriented. Moreover, they showed their desire to learn if there were more female-oriented contents. Therefore, program planners are expected to provide content which appeal to both genders, such as games or design programs with various colors or decoration. In the Korean culture, femininity involves colorful and decorative features.

**Recommendations for Future Research**

I recommend several areas for the future research in this field. First, I suggest cross-cultural studies with other ethnic groups, or the same ethnic group in different locations such as Los Angeles or New York. To know how each ethnic group’s socio-demographic factors affect their attitudes toward computers might be helpful to understand the phenomenon and implement efficient computer training.

Secondly, I suggest studying about the process of attitude change toward computers because attitudes are subject to change. Older adults may change their attitudes toward computers in terms of socio-demographic factors, and it must be helpful to describe and explain what these influential socio-demographic factors are and how they affect to attitude change. The findings may be practical in the applications of the computer training for older adults.

Thirdly, longitudinal studies are necessary for the future study in this area so that we can closely examine what, how, and why socio-demographic factors affect older adults’ attitudes toward computers. It may provide a holistic explanation of not only an individual’s formation of attitudes but also the process of attitude change. Moreover, we can describe and explain what and how various variables interfere into attitude formation and change.
Fourthly, in terms of research methods, the observation of computer use is required to obtain rich and vivid data to describe and explain the phenomenon. One of the limitations of this study is that I have not observed the actual computer training sessions, because there were no ongoing computer training programs at the sites.

Fifthly, a recommendation for future studies for older adults’ attitudes toward computers is to focus on specific groups of computer users regarding duration of computer use, frequency of computer use, and types of computer use. Older adults are expected to be more familiar with computers because the number of computer users is constantly increasing and the level of skill is increasing as well. In terms of duration of computer use, older adults can be specified with years of computer use such as 5-year experience or 10-year experience. The frequency can be categorized by frequency of computer use such as once a week, five times a week, or ten times a week. The types of computer use must be the most interesting area because we can explore how certain content of the computer affects formation of attitudes, for example, internet, e-mail, teleconference, specific websites for older adults, word processing, or games.
References


Appendix A
Support Letter 1

September 22, 2004
Office for Research Protections
The Pennsylvania State University
212 Kern Graduate Bldg.
University Park, PA 16802-3301

Dear Jodi L. Mathieu,

I, Changho Kim, as a director of the Baltimore Christian Center for Older Korean Adults am pleased to support the graduate research of Hyuckhoon Kwon, a doctoral candidate in Adult Education. It is my understanding that Hyuckhoon’s research topic is “Older Korean American Adults’ Attitudes Toward Multimedia”. His plans are computer presentation, document review, and personal interviews with the participants of the center.

Should you require additional information, please do not hesitate to contact me at (410)744-5711.

Sincerely yours,

ChangHo Kim

==============================================
To: Office for Research Protections  
The Pennsylvania State University  
212 Kern Graduate Bldg.  
University Park, PA 16802-3301

Sept. 27, 2004

James Ro  
Calvary Presbyterian Church  
6800 Loch Raven Bl.  
Baltimore, MD 21286  
(410) 321-8030

To whom it may concern:

This is to verify that I, the pastor of Calvary Presbyterian Church located at the above address allow and permit Mr. Hyuck Hoon Kwon to interview church members to write a dissertation entitled “Older Korean American Adults’ Attitude to Multimedia” as a partial fulfillment for his doctorate program. In understanding that his research would be a great help for the Korean-American community as the older generation becomes increasingly exposed to multimedia, I give my full support to his endeavor.

Sincerely,

James Ro
Appendix B.
Guideline of Interview
English Version

Guideline of Interview

Thank you for allowing me to interview you. The purpose of the interview is to have you describe your opinions about using a computer in general—at the Baltimore Christian Center for Older Korean Adults, at home, or any other place such as libraries or hospitals. You can feel free to talk about anything regarding this matter.

Before the interview begins, would you provide your socio-demographic information?

<Socio-demographic information>

Date:
Place:
Time of Interview:
• Age:
• Gender:
• Educational background:
  - In Korea:
  - In the United States:
• Job experiences: (in both countries):

• Duration of living in the United States:
• Income level:
• Duration of attendance of the Baltimore Christian Center for Older Korean Adults:
• Religion:
Pre-interview questionnaire

1. Tell me about your life in Korea and America. (Birth, family, economic situation, education, work experience, married life, and children)


3. What are the benefits you see of using the computer?

4. Describe about how you feel about the computer.

5. Describe reasons why you feel this way.
이 인터뷰에 응해 주셔서 감사합니다. 질문에 자세히 말씀해 주십시오.

### <사회적, 개인적 자료>

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<thead>
<tr>
<th>날짜:</th>
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- 나이:
- 성별:
- 교육정도:
  - 한국에서:
  - 미국에서:
- 직업 (한국, 미국):

- 미국 거주기간:
- 소득액: (월, 년):
- 볼티모어 기독성인대학 참여기간:
- 종교:
- 기타:


인터뷰 질문 첫 번째

1. 귀하의 한국에서와 미국에서의 삶에 대해서 자세히 말씀해 주세요. (출생, 가족관계, 경제력, 교육, 직업 경험, 결혼 생활, 그리고 자녀)

2. 귀하의 컴퓨터 경험에 대해서 자세히 말씀해 주세요. (학교, 집, 교회, 도서관, BCC, CPC, 기타. 경험의 유형들—직접, 간접 경험. 언제, 어디서, 누구로부터, 무엇을, 어떻게, 왜)

3. 컴퓨터 사용으로 부터 얻는 이점이 뭐라고 생각하십니까?

4. 컴퓨터에 대해서 어떻게 생각하시는지 자세히 말씀해 주세요.

5. 왜 그렇게 생각하시는지 이유를 자세히 말씀해 주세요.

감사합니다.
# Computer Presentation Guideline

## 1st Session

<table>
<thead>
<tr>
<th>Goals</th>
<th>Participants will explore the basics of the computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Function of the keyboard, mouse, hardware and software, microphone, camera, word processor, multimedia functions-music, picture, film, World Wide Web (WWW), Internet.</td>
</tr>
</tbody>
</table>
| Method         | ● The presenter shows and explains about prepared content to participants of the session.  
                 ● After learning the basic functions of each, the participants will have chances to use the computer.  
                 ● Participants will listen to some Korean music.  
                 ● Participants will explore above functions of the computer by presenter’s lesson and explanation. |
| Question & Answer Session | Participants will engage in a question and answer session. |
| Time           | This activity is planned for a 1 hour time frame but if more time is needed, it can be extended. |
# Computer Presentation Guideline

## 2nd Session

<table>
<thead>
<tr>
<th>Goals</th>
<th>Participants will experience selected software and examine how they can utilize the computer for themselves.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Word processor, media player, Internet, communication with others Over the internet.</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
</tr>
</tbody>
</table>
- Word processor: participants can type their names and simple sentences in Korean.  
- They will print out what they have typed.  
- Participants will surf the internet and read Korean news. (Josen Ilbo newspaper)  
- Participants will watch some clips from Korean soap operas over the internet.  
- Participants will read emails.  
- Participants will view some photos on the computer.  
- Participants will experience how to search information about osteoporosis on the Internet.  
- Participants will play games on the Internet.  
- Participants will explore their own church's website. |
| Question and answer session | A question and answer session will be provided. |
| Time | This session is planned for 1 hour but it may be extended if necessary. |
Post-Interview Questionnaire

1. You just experienced a computer presentation. Now what are your opinions on the benefits of using the computer?

2. Please describe how you feel about the computer.

3. Would you describe why you feel that way?

4. Do you plan to learn or use the computer further? Why or why not?
두번째 질문

1. 귀하는 컴퓨터에 대한 소개시간을 갖았습니다. 이제 귀하는 컴퓨터의 좋은점이 뭐라고 생각하십니까?

2. 귀하가 컴퓨터에 대해서 어떻게 생각하시는지 말씀해 주세요.

3. 그 이유를 자세히 설명해 주세요.

4. 귀하는 앞으로 컴퓨터를 지속적으로 하거나 배우실 생각이십니까? 그 이유는?
Curriculum Vitae: Hyuckhoon Kwon

Education

Korea University, Korea: B.A., Sociology, 1989
Myongji University, Korea: M.A, Christian Education, 1992
The Coppin State University, Baltimore: M.A., Adult & Continuing Education. 1998