

**DISTANCE-LEARNING RECEPTIVITY DIFFERENCES BETWEEN  
AMERICAN AND KOREAN GRADUATE STUDENTS**

A Dissertation

by

JUNG IL KIM

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2004

Major Subject: Educational Human Resource Development

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## ABSTRACT

Distance-Learning Receptivity Differences Between American and Korean Graduate Students. (May 2004)

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The purposes of this study were to determine if differences exist in distance-learning receptivity and perceived technology usefulness between American and Korean graduate students as well as Individualists and Collectivists.

Results indicated that the two groups differed in distance-learning receptivity and perceived technology usefulness. However, cultural value tendency did not influence either receptivity or usefulness. Recommendations based on this study:

1. Researchers who are interested in cross-cultural field of distance learning should find what potential factors influence the differences in the receptivity and perceived usefulness between American and Korean group.

2. Administrators and decision makers who want to implement or adopt distance learning for their employees or students need to understand that cultural value, at least individualism and collectivism, is not a significant factor in distance learning. Instead, they should understand the importance of prior experience because people feel that distance is better than they've ever thought possible once they experience.

3. In implementing distance learning, practitioners should consider interactive media more than non-interactive media. Distance learning is mostly dependent upon technology. Practitioners should consider that distance-learning technology should be developed in terms of perceived usefulness to users.

4. In respect to usefulness, advanced and contemporary technologies were perceived more useful than traditional technologies in distance learning. Therefore, practitioners should also consider advanced technology rather than traditional technology in distance learning.

Recommendations for future research:

1. It is suggested that Hofstede's other cultural value dimensions should be included in future studies.

2. Future researchers should consider other factors such as personal background, learning style, skill level, and motivation.

3. Future research is needed to extend the current findings and test their generalizability to other types of users, for example, undergraduate students or organization employees.

4. This study used American and Korean samples only. Other national cultures should be tested with various cultural dimensions in a future study.

## **DEDICATION**

This dissertation is dedicated to my wife without whose love and support I could not have persevered in my pursuit of this doctoral degree.

This dissertation is also dedicated to my parents, for their endless love, encouragement, abundant support, and persistent prayers.

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## TABLE OF CONTENTS

	Page
ABSTRACT .....	iii
DEDICATION .....	v
ACKNOWLEDGEMENTS .....	vi
TABLE OF CONTENTS .....	vii
LIST OF TABLES .....	x
 CHAPTER	
I INTRODUCTION .....	1
Statement of the Problem .....	3
Significance of the Study .....	4
Purpose of the Study .....	4
Definition of Terms .....	8
Assumption.....	9
Limitations .....	10
II REVIEW OF THE LITERATURE .....	11
Background .....	11
Understanding Culture .....	12
Individualism/Collectivism .....	19
The Differences between USA and Korean Culture .....	21
National Culture and Distance Learning.....	23
Technology Acceptance Model.....	25
National Culture and Technology Acceptance Model .....	26
III METHODOLOGY.....	29
Population and Subject Selection.....	29
Variables.....	30
Procedures for Gathering the Data .....	30
Instrumentation.....	31
Overview of Statistical Procedures .....	34

## TABLE OF CONTENTS (continued)

CHAPTER	Page
IV	RESEARCH FINDINGS ..... 36
	Population and Sample..... 36
	Instrumentation..... 37
	Descriptive Data: Demographic Factors ..... 40
	Answers to Research Questions ..... 42
V	SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS ..... 63
	Summary ..... 63
	Discussion and Conclusions..... 68
	Recommendations ..... 71
	REFERENCES ..... 73
	APPENDIX A ..... 80
	APPENDIX B ..... 82
	APPENDIX C ..... 84
	APPENDIX D ..... 91
	APPENDIX E..... 93
	APPENDIX F ..... 95
	APPENDIX G ..... 97
	APPENDIX H ..... 99
	APPENDIX I..... 101
	APPENDIX J..... 103
	APPENDIX K ..... 105
	APPENDIX L..... 107

**TABLE OF CONTENTS (continued)**

	Page
APPENDIX M.....	109
APPENDIX N.....	111
APPENDIX O.....	113
VITA .....	115

## LIST OF TABLES

TABLE		Page
1	Ranking in Terms of Measures of Culture .....	22
2	Individualism-Collectivism: Rotated Solution of Exploratory Factor Analysis .....	37
3	Media Type: Rotated Solution of Exploratory Factor Analysis.....	38
4	Course Type: Rotated Solution of Exploratory Factor Analysis.....	39
5	Technology Type: Rotated Solution of Exploratory Factor Analysis.....	40
6	Descriptive Statistics of Respondent's Demographic Factors .....	41
7	Summary of Analysis of Variance for Each Cultural Value .....	43
8	Means and Standard Deviations for Cultural Values .....	44
9	Medians of American and Korean Students for Cultural Values.....	45
10	The Cross Tabulation Frequencies for Nationality and Cultural Value Tendency .....	46
11	Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as an Interactive Media.....	47
12	Means and Standard Deviations of the Receptivity of Distance Learning as an Interactive Media .....	48
13	Summary of Two-way Analysis of Variance for the Receptivity of Distance Learning as a Non-interactive Media.....	49

### LIST OF TABLES (Continued)

TABLE		Page
14	Means and Standard Deviations of the Receptivity of Distance Learning as a Non-interactive Media .....	49
15	Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as Major Course .....	50
16	Means and Standard Deviations of the Receptivity of Distance Learning as a Major Course .....	51
17	Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as Non-major Course .....	52
18	Means and Standard Deviations of the Receptivity of Distance Learning as Non-major Course .....	52
19	Summary of Two-Way Analysis of Variance for the Advanced Technology Usefulness.....	54
20	Means and Standard Deviations of the Advanced Technology Usefulness .....	55
21	Summary of Two-Way Analysis of Variance for the Contemporary Technology Usefulness .....	56
22	Means and Standard Deviations of the Contemporary Technology Usefulness .....	56
23	Summary of Two-Way Analysis of Variance for the Traditional Technology Usefulness .....	57
24	Means and Standard Deviations of the Traditional Technology Usefulness .....	57
25	Pearson Correlation Coefficients among the Receptivity of Distance Learning and Perceived Technology Usefulness .....	58
26	Beta Weights for Multiple Regression on the Receptivity of Distance Learning.....	60

**LIST OF TABLES (Continued)**

TABLE		Page
27	Beta Weights for Multiple Regression on the Perceived Technology Usefulness .....	61

## CHAPTER I

### INTRODUCTION

The field of human resource development (HRD) is affected by and responds to trends in work, organizations, and the global economy because of its focus on improvement, whether learning or performance (Swanson & Holton, 2001), at the individual, team or group, process, and organizational levels. A review of literature, including the annual proceedings of the Academy of Human Resource Development (AHRD), reveals recurring themes: work force diversity, cross-cultural issues, the learning organization, technology in work and learning, increasing numbers of older workers, informal learning, and spirituality in the workplace (Kerka, 2001). According to Ruona, Lynham, and Chermack (2003), the themes of globalization, technology, and changing organization and workforce are very common in the field and HRD professionals should recognize their new role in those emerging trends.

The themes, especially technology in work and learning, are a rapidly accelerating issue in the field of HRD (Benson, Johnson, & Kuchinke, 2002; Church, Gilbert, Oliver, Paquet, & Surface, 2002; Sleezer, Wentling, & Cude, 2002). The usage of information technology (IT) is influencing performance and learning agendas in the majority of organizational sectors, including manufacturing, service industries, health care, government, education, and public service (Marquardt & Kearsley, 1999).

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This dissertation follows the style and format of *Human Resource Development Quarterly*.

However, technology itself never increases organizational performance. Merely acquiring technology is often insufficient to anticipated benefits because technology does not automatically guarantee its use. The integrated use of technology with an organization's infrastructure of human and business complementary resources is essential to improve organization performance (Powell & Dent-Micallef, 1997).

Technology and globalization are closely related. Technology is driving globalization (Chareonwongsak, 2002; Rothwell & Kolb, 1999). Furthermore, advances in communication technologies are transforming the workplace culture, as well as the workforce worldwide. Workers are moving in greater numbers across borders and national cultures, thereby increasing diversity within societies and institutions (Harris & Moran, 2000). Consequently, managing workforce diversity in organizations has become another critical issue.

As technology changes the way we work and communicate in organizations which are comprised of diverse workgroups, it also changes how we learn. Learning will become more self-initiated and individualized. It's important to understand how technology affects learning, how people respond differently to technology, and how to enhance team learning and organizational learning (Marquardt, 1996). According to Anakwe, Kessler, and Christensen (1999), distance learning, as a new paradigm of learning, is driven by technology. The implementation of distance learning for employee training and development is gradually increasing in organizations because distance learning is educationally effective, offers business value, and is more cost-effective than any other approaches in many cases (Chute, Thompson, & Hancock, 1999).

According to Russell (1999), there is no difference between traditional and distance learning. However, the fact that distance learning is good for and acceptable to everyone still needs more empirical evidences. In particular, there is a need to explore how people who have different cultural backgrounds respond to distance learning. As an extension of the work of Anakwe, Kessler, and Christensen (1999), this study focused on cultural factors and their influences on receptivity of distance learning and perceived technology usefulness.

### **Statement of the Problem**

Though distance learning is generally accepted as a new paradigm of learning and is being used increasingly for organizational learning, members who possess different values might have different attitudes about distance learning. At an individual level, there are many variables that affect one's attitude toward distance learning. For example, personal background, learning style, prior learning and experience, expectation, skill level, and motivation can vary widely in terms of being significant contributors to one's attitude concerning distance learning (Simonson, Smaldino, Albright, Zvacek & Summerville, 2000). However, authors of literature concerning distance learning, including the American Journal of Distance Education and the Journal of Distance Education which are the most representative journals in the field, provide little in terms of cultural factors which can be critical to receptivity of distance learning.

In this study, two samples of distinctively different culture were selected based on cultural dimensions, a widely recognized approach, used in cross-cultural studies. A

determination of any differences between the two cultures in terms of distance-learning receptivity and perceived technology usefulness was undertaken.

### **Significance of the Study**

The results will contribute to the distance learning literature in the cross-cultural research area. In addition, the results will enhance the work of practitioners and researchers because each has a strong interest in understanding why people accept distance learning. Moreover, better methods for designing, evaluating, and predicting how users will respond to new learning methods in a global environment must be developed.

### **Purpose of the Study**

The purpose of this study was to:

1. Determine if differences exist in distance-learning receptivity and perceived technology usefulness.
  - a. Between American and Korean graduate students.
  - b. Between Individualists and Collectivists.
2. Examine the interaction effect between nationality and cultural values.
3. Examine the relationship between distance-learning receptivity and perceived technology usefulness.

More specifically, in this study the researcher addressed the following research questions:

1. Are there differences in cultural values between American and Korean graduate students?
  - a. Do American and Korean graduate students differ in the cultural value of Stand Alone?
  - b. Do American and Korean graduate students differ in the cultural value of Win Above All?
  - c. Do American and Korean graduate students differ in the cultural value of Sacrifice in Group?
  - d. Do American and Korean graduate students differ in the cultural value of Group Preference?
  - e. Do American and Korean graduate students differ in the cultural value of Individual Thinking?
2. Are there differences in receptivity of distance learning as a communication media, when considering nationality and cultural value tendency?
  - a. Are there differences in receptivity of distance learning with interactive media between American and Korean graduate students?
  - b. Are there differences in receptivity of distance learning with interactive media between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?

- c. Is there a significant interaction effect between nationality and cultural value tendency in receptivity of distance learning with interactive media?
  - d. Are there differences in receptivity of distance learning with non-interactive media between American and Korean graduate students?
  - e. Are there differences in receptivity of distance learning with non-interactive media between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?
  - f. Is there a significant interaction effect between nationality and cultural value tendency in receptivity of distance learning with non-interactive media?
3. Are there differences in receptivity of distance learning as a technology, when considering nationality and cultural value tendency?
- a. Are there differences in receptivity of distance learning as a major course between American and Korean graduate students?
  - b. Are there differences in receptivity of distance learning as a major course between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?
  - c. Is there a significant interaction effect between nationality and cultural value tendency in receptivity of distance learning as a major course?
  - d. Are there differences in receptivity of distance learning as a non-major course between American and Korean graduate students?

- e. Are there differences in receptivity of distance learning as a non-major course between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?
  - f. Is there significant interaction effect between nationality and cultural value tendency in receptivity of distance learning as a non-major course?
4. Are there differences in perceived technology usefulness, when considering nationality and cultural value tendency?
- a. Are there differences in perceived technology usefulness between American and Korean graduate students?
  - b. Are there differences in perceived technology usefulness between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?
  - c. Is there a significant interaction effect between nationality and cultural value tendency in perceived technology usefulness?
5. Is perceived technology usefulness associated with receptivity of distance learning?
6. Are there demographic factors beyond the cultural factor that influence distance-learning receptivity and perceived technology usefulness?

### **Definition of Terms**

*Collectivism*: A term used to describe societies in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty (Hofstede, 1997).

*Cultural value*: A broad tendency to prefer certain states of affairs to others. Such preferred states can be attributed to individuals as well as collections of individuals. (Hofstede, 1980).

*Distance learning*: An inclusive term which includes all similar terms such as online learning, web-based learning, e-learning, technology-based learning, and others.

*Distance-learning receptivity*: The readiness or willingness to receive distance learning favorably as a communication medium and technology (Anakwe, Kessler, & Christensen, 1999).

*Diversity*: Differences in people of color, ethnic origin, gender, sexual or religious preferences, age, and disabilities (Harris & Moran, 2000).

*Group Preference*: A term used to reflect a preference to work with others in groups (Hwang, Kessler, & Francesco, 2002; Wagner, 1995).

*Individual Thinking*: A term used to reflect a need for individual beliefs to be accommodated in group situations (Hwang, Kessler, & Francesco, 2002; Wagner, 1995).

*Individualism*: A term used to describe societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family (Hofstede, 1997).

*Perceived technology usefulness*: The extent to which people believe that technology will help them perform their job better (Davis, 1989).

*Readily detectible attributes*: Attributes which can be easily recognized in a person such as age, gender, or national/ethnic origin (Shaw & Barret-Power, 1998).

*Sacrifice in Group*: A term used to recognize that individuals have to make personal sacrifices in group situations (Hwang, Kessler, & Francesco, 2002; Wagner, 1995).

*Stand Alone*: A term used to reflect a desire to stand apart from the crowd (Hwang, Kessler, & Francesco, 2002; Wagner, 1995).

*Underlying attributes*: Personal characteristics which are not so easily identifiable, such as cultural beliefs, personality characteristics, or knowledge level (Shaw & Barret-Power, 1998).

*Win above All*: A term used to reflect an all-consuming inclination to win in competitive situations (Hwang, Kessler, & Francesco, 2002; Wagner, 1995).

### **Assumption**

For the purpose of this study, the following assumption was made by the researcher.

1. Korean respondents whose first language is Korean understood the English version of the instrument and had the ability to self-report.

### **Limitations**

1. The sample was limited to 94 Korean students who were studying in America. The number is insufficient to represent whole Korean culture. However, the number is enough to make inference for the Korean population of Texas A&M University.
2. The sample of Korean students had spent different amounts of time in America. As individuals who immigrate from one culture to another, acculturation might occur. To determine the degree of Korean student acculturation effects, the survey included demographic information in regard to time spent in the U.S but the sample size of Korean student (n=94) was insufficient to fractionate in terms of this independent variable because the number of students who had spent under 2 years was only 21. The others (n=73) had spent over 2 years in America.

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

The purpose of this review was to summarize the literature in terms of understanding culture, distance learning, and the technology acceptance model. Therefore, the review of related literature is presented in two parts. The focus of the first part is on understanding culture, the selected cultural values and the two different cultural groups for this study. Distance learning and its relationship with culture, and the technology acceptance model are illuminated in the second part.

#### **Background**

Generally, diversity is defined as the differences in people of color, ethnic origin, gender, sexual or religious preferences, age, and disabilities (Harris & Moran, 2000). More precisely, Jackson, May, and Whitney (1995) differentiated two sources of diversity at the individual level of analysis. Readily detectable attributes are the first ones which can be quickly and consensually determined with only brief exposure to a target person. National origin, gender, and age are examples of readily detectable attributes. The second underlying attributes represent personal characteristics that are not easily identifiable. Social status, attitudes, values, personality characteristics, and behavioral style are examples of underlying attributes (Jackson, May, & Whitney, 1995).

The group development model was developed by Shaw and Barret-Power (1998) to examine the influence of diversity on group process and performance. According to the model, some underlying attributes are closely correlated with readily detectable

attributes. For example, Nationality and ethnic origin are significantly related to cultural values and perspectives (Hofstede, 1980). Males and females tend to differ not only in their attitudes, but also in their approach to disagreements and conflicts (Carli, 1989).

Based on the assumption that some underlying attributes are correlated with readily detectable attributes, this researcher hypothesized that national culture is related to cultural value and attitude on distance-learning receptivity and perceived technology usefulness. Therefore, the review of literature covers how culture and cultural diversity are defined, cultural dimensions which has been used in the cross-cultural field, and cultural influence on distance learning and the technology acceptance model.

## **Understanding Culture**

### **Definitions**

Culture is a term that means many different things to different people. Kroeber and Kluckhohn (1952), in their classical review of over 170 different definitions of culture, presented one of the most inclusive and generally accepted definitions in anthropology.

Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other, as conditioning elements of future action (p.181).

Another prominent definition was proposed by Hofstede (1980), a well-known author in the cross-cultural management field. He defined culture as “the collective

programming of the mind which distinguishes the members of one human group from another” (p. 260).

Hoecklin (1995) proposed what culture is and what it is not. Culture is a shared system of meanings. Individuals of a group share patterns that enable them to see the same things in the same way and this holds them together. There must be some common ways of understanding events and behavior, and ways of anticipating how other people in a same social group are likely to behave. Furthermore, culture is neither right nor wrong because it is relative. Therefore, it should be respected and understood in the best way. In addition, culture is derived from a social environment, not from a genetic factor. Culture is a collective phenomenon that is about shared values and meanings.

Triandis (1972) considered culture as a perception of the man-made part of the environment. Subjective culture is defined as a group’s characteristic way of perceiving its social environment. Examples of subjective components are attitudes, beliefs, roles, norms, and value that individuals share. He provided culture-free laws to measure subjective culture, contributing the improvement of intercultural understanding, communication, and adjustment.

People can be classified culturally in many ways because culture exists at many levels and types of social groups. For example, they can be a nation, region or ethnic group which is simply called national culture. Gender, generation, occupation, organization, even a family can be a level of culture (Buragga, 2001). Since a culture exists at many levels of social groups, this study focused on cultures at the national level.

National boundaries do not necessarily correspond with the cultures that are often formed from the combination of ethnic groups within the nation. Some nations may appear to have similar types of cultures, however they may have a large minority population who consider themselves ethnically and culture different from the majority population. By including every person in a nation in the same culture it is not fair to those within the cultures who think and act differently. “There are variations among individuals within the nation and the national culture is only a pattern of the values of the members” (Buragga, 2001, p. 11)

### **Cultural Orientation**

Adler (1997) stated that, “The cultural orientation of a society reflects the complex interaction of values, attitudes, and behaviors displayed by its members” (p.15). Value is defined as a broad tendency to prefer certain states of affairs over others. Such preferred states can be attributed to individuals as well as collections of individuals (Hofstede, 1980). An attitude expresses values and disposes a person to act or to react in a certain way toward something. Attitudes are present in the relationship between an individual and some kind of object. Behavior is any form of human action. The behavior of people is defined by their culture (Adler, 1997).

## **Cultural Diversity**

Diversity is inherent both inside and outside any given culture; some things are preferred over others. The norm is determined by what is most acceptable within the culture, including values and actions. “A cultural orientation describes the attitude of most of the people most of the time, not all of the people all of the time” (Adler, 1997, p.15). Stereotypes are often used to label societies cultures.

People uphold certain cultural norms by how they disapprove of someone’s actions. In some cases, laws are set to ensure that society adheres to a certain behavior. The less important norms are often considered customs or tradition and do have accountability in place. Society will measure the importance of a cultural value by the severity of the punishment placed on breaking that norm.

## **Cultural Dimensions**

Gudykunst & Kim (1984) classified two approaches to examining the cultural process. The first approach is called emic which looks at how a particular culture works from inside. In this approach, the researchers wish to understand the behavior of people in a culture from the researcher’s point of view. The second approach is comparing one culture with another, which is called as etic. The etic approach emphasizes the most general description of social phenomena, with concepts that are culture-free, pancultural, or universal. Categories are predetermined by the researcher in order to examine the difference aspects of the cultures being studied. In this way, the overall culture is compared to some specific aspect of the culture.

Numerous authors have proposed conceptual frameworks for evaluating cultural dimensions (Kluckhohn & Strodtbeck, 1961; Hall & Hall, 1990; Hofstede, 1980; Trompenaars, 1994).

Kluckhohn and Strodtbeck (1961) classified five categories of value orientations that are evident in all societies. However, societies are different in the manner they order their value orientation. In any culture there is a set of dominant or preferred value orientations. These value orientations are relational, time, activity, man-nature, and human nature orientation. Mankind is confronted with problems emerging from relationships with fellow beings, time, activities, and nature; one culture can be distinguished from another by the arrangement of the specific solutions it selects for each set of problem situations. The solutions identified above depend on the meaning given by people to life in general and to their fellows, time, and nature in the particular culture.

Research has provided an overall framework for understanding the cultural dimensions and how they affect the conduct of international business (Hall & Hall, 1990). Tools that have been identified to understand these dimensions include: monochronic vs. polychronic time, high vs. low context and information flow.

Hofstede (1980) proposed the most widely cited set of national cultural dimensions. He identified four dimensions of national culture: power distance, uncertainty avoidance, individualism, and masculinity. Power distance indicates the extent to which a society accepts that power in institutions and organizations is distributed unequally. Uncertainty avoidance indicates the extent to which a society feels

threatened by uncertain or ambiguous situations. Individualism refers to a loosely knit social framework in a society in which people are supposed to take care of themselves and/or their immediate families only. Collectivism, the opposite of individualism, occurs when there is a tight social framework in which people distinguish between in-groups and out-groups; they expect their in-group such as relatives, clan, and organizations to look after them, and in exchange for that they owe absolute loyalty to it. Masculinity with its opposite pole, femininity, expresses the extent to which the dominant values in society are assertiveness, money, and material things, not caring for others, quality of life, and people (Harris & Moran, 2000).

Trompenaars (1994) developed a seven set of culture dimensions: Universalism versus particularism, individualism versus collectivism, neutral versus affective relationships, specific versus diffuse relationships, achievement versus ascription, internal versus external control, and time perspective.

Cultures that hold broad rules and obligations have a strong foundation of moral reference are referred to as universalism. Universalism holds to an equal and fair process even when friends are involved in a situation. The universalism perspective believes that the standards that are set are “right” and will try to change the minds of anyone who thinks differently. Another culture, particularism, people consider certain circumstances to be above the rules. Certain relationships are stronger than any rule and the reaction to a situation may change depending on the circumstances surrounding the situation. (Trompenaars, 1997). This dimension is closely aligned to the individualism versus collectivism dimension of Hofstede (1980).

The concept of individualism versus collectivism is much the same as Hofstede's dimension.

Trompenaars' (1997) classification of neutral versus affective relationships is based on how people express emotions. In neutral culture, people have a tendency to keep emotions from being out of control in the workplace. Affective cultures tend to expose emotions as much as possible, and may regard a neutral culture as purposely deceitful in comparison. The neutral person is easily accused of being ice-cold with no heart; the affective person is seen out of control and inconsistent.

A distinction between specific and diffuse relationships was also proposed by Trompenaars (1997). According to him, an individual has an inner private space and a larger public space. The difference between specific and diffuse culture is the relative size of these spaces. In a specific culture, there is a tendency to have larger public spaces and smaller private area. These spaces do not overlap and people tend to have a very small private space carefully separated from their public space. Conversely, a diffuse culture has a larger private area separated from a relatively small public layer. Specific culture appears direct, open and extrovert, whereas the diffuse appears indirect, closed and introvert due to their differences.

Achievement versus ascription is another of cultural dimension. In an achievement culture, the status of individuals is determined by their performance in their functional role. On the other hand, in ascriptive cultures people gain status naturally by certain attributes such as old age or being a male.

The idea of dimension between internal and external control is that how people respond to nature. In an internal orientation, people believe that they can and should control nature by imposing their will upon it. On the other hand, people believe that man is part of nature and must go along with its law, directions and forces in an external orientation.

Time perspective refers to the idea that cultures can view time in two ways. Activities can be done as quickly as possible in the shortest possible sequence of passing time or synchronized so that completion is coordinated. This is referred to as time as sequence and time as synchronization respectively.

### **Individualism/Collectivism**

The terms individualism and collectivism are used by many people in different parts of the world and are given various meanings. The terms had been used by political scholars, but now are used in all social sciences (Triandis, 1995). Hofstede (1997) defined individualism and collectivism as follows and the definition will be used for this study:

Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty. (p.260)

According to Hofstede (1980), individualist societies emphasize "I" consciousness, autonomy, emotional independence, individual initiative, right to privacy, pleasure seeking, financial security, need for specific friendship, and universalism.

Collectivist societies, on the other hand, stress solidarity, sharing, emotional dependence, group solidarity, sharing, duties and obligations, need for stable and predetermined friendship, group decision, and particularism.

Niles (1998) described individualism versus collectivism as “the single most important dimension of cultural difference in social behavior” (p. 316). Gudykunst et al. (1992) also described individualism versus collectivism as the major cultural dimension that has been used across disciplines. This study used the individualism versus collectivism dimension to accomplish its purpose.

Wagner (1995) developed five individualism and collectivism factors from 20 measurement items based on an exploratory factor analysis. These are ‘Stand Alone’ which focuses on individual independence and self-reliance, ‘Win above All’ which reflects an all-consuming inclination to win in competitive situations, ‘Group Preference’ which shows a preference to work with others in groups, ‘Sacrifice in Group’ which recognizes that individuals have to make personal sacrifices in group situations, and ‘Individual Thinking’ which reflects a need for individual beliefs to be accommodated in group situations. Wagner (1995) classified Stand Alone, Win above All, and Individual Thinking as individualistic factors, and Group Preference and Sacrifice in Group as collectivistic. The researcher of this study used these five factors to determine the differences in cultural values of the two nationalities.

The contrast between the individualism and collectivism behavioral domains also appears in the area of individual differences. There are individuals who are countercultural in every society (Triandis, 1995).

### **The Differences between USA and Korean Culture**

According to the literature (Calhoun, Teng, & Chenon, 2002, Hofstede, 1980; Hofstede and Bond, 1988; Hall, 1976; Trompenaars and Hampden-Turner, 1998), the USA and Korea are very widely dispersed in their cultural value ranks except for one dimension, power distance. If one country is in the top one third of the countries measured, the other country is in the bottom of one third (see Table 1). The USA culture has a low power distance compare to Korea culture. "Power distance reflects the degree to which a society accepts an unequal distribution of power" (Calhoun, Teng, & Chenon, 2002, p.296). Korea culture more tends to accept and follow orders from superiors without a question than America. Superiors are anticipated to have privileges and are accorded high rank in Korea culture. Korea society with strong uncertainty avoidance desires order. Rules and written procedures are sought or desired, as they imply unwanted control. America is a masculine society that tends to be decisive and quick to judgment while Korea culture is more likely to seek a harmonious solution than a fight and to be concerned with the impact of actions on others (Calhoun, Teng, & Chenon, 2002).

The USA is a universalist while Korea is particularist culture. People would not break the rules for a friend in the USA while Korean people are likely to do so. The USA is classified as a specific culture that has little private space and a lot of public space while Korea is categorized as a diffuse culture. In Korea, the large in-group and loyalty to the organization is private space. In time orientation, the USA is more oriented to the present and less to the past and future than Korea. USA is also categorized as

achievement culture that reflect status is awarded on achievement. However, Korea is an ascription culture that status is rewarded on family background (Calhoun, Teng, & Chenon, 2002).

In particular, Korea is a very collectivistic country and the USA is a very individualistic country. As indicated in Table 1, the USA is the highest ranked in terms of the individualism variable. The members of the society believes people responsible for themselves and their immediate families in America while in a Korea society, the member is part of a large group of extended family, friends and firm all of which demand loyalty. The group welfare is paramount in Korea culture (Calhoun, Teng, & Chenon, 2002).

**Table 1. Rankings in Terms of Measures of Culture**

Culture Variables	USA rank/N	Korea rank/N
Individualism	1/53	43/53
Power distance	38/53	27.5/53
Masculinity	15/53	41/53
Uncertainty avoidance	43/53	16.5/53
Long term - short term	17/23	5/23
Communication Context	Low	High
Time orientation	Monochronic	Poylchronic
Universalism – particularism	27/31	3/31
Achievement – ascription	43/46	14/46
Specific – diffuse	37/45	10/45
Time present – past	3/20	18/20

*Note.* Adopted from “Impact of National Culture on Information Technology Usage Behaviour: An Exploratory Study of Decision Making in Korea and the USA,” by K. Calhoun, J. Teng, and M. J. Cheon, 2002, *Behaviour and Information Technology*, 21(4), 295.

Researchers have examined collectivism in Korean culture by analyzing several features of the traditional Korean culture and the modern Korea culture. Travelogues written by foreign observers of Koreans during the years 1870 to 1970, a review of empirical studies performed on Korean values since 1945, and survey data collected from younger and older generations of Koreans in the late 1970 were some of the aspects of Cha's (1994) research. The findings concluded from the travelogues that an emphasis was put on family line and the dependence on relationships. Hierarchy, courtesy, mutual succor, maintenance of tradition, and loyalty to king were also analyzed in Cha's (1994) work. A significant addition that occurred in the late 1970s was school. The role of the school displaced the tradition role of the extended family and clan. Even though there have been changes towards individualism, the majority of Koreans hold true to collectivist beliefs. Research does demonstrate that the younger generation is more likely to be individualistic, especially when dealing with their children and the amount of freedom they provide to pursue personal goals that are in conflict with the family.

### **National Culture and Distance Learning**

Collis, Parisi and Ligorio (1996) reported barriers to effective online learning and global communication. The barriers are cultural differences, teaching style differences, different educational values, language problems, and technical problems relating to platforms, operating systems and lack of standard interfaces. As technologies advance, technical problems have been resolved step by step. However, other problems are obstacles to overcome for the success of online learning. Especially, cultural differences

amongst students and between students and teachers are more challenging than before in the teaching and learning environment. Gunawardena et al. (2001) described three difficulties of distance learning being implemented in a different culture (p.4).

- Many distance learning courses do not have any face-to-face meetings, so forming all of the students into a coherent and effective learning community requires excellent course architecture and tutoring skill.
- Students are often accessing the course from many different countries and time zones. This poses technical and bandwidth difficulties and makes real-time events especially challenging.
- Non-native students, using a second language to communicate, find the asynchronous interactions of online courses easier to understand than the faster pace of verbal interaction in face-to-face classes. However, the jargon, in-jokes, culture-specific references and acronyms of typical online native speaker communication can become a barrier.

Gunawardena et al. (2001) empirically found that different culture influenced online group process and development. Under the well-known Tuckman's (1965) group process model, Mexico and USA participants differed in perception of the Norming and Performing stages of group development. The two groups also differed in their perception of collectivism, power distance, femininity, and high context communication of cultural dimensions.

Anakwe, Kessler, and Christensen (1999) found that individualists and collectivists differed in their receptivity towards distance learning under three research questions: Would an individual's culture affect his or her receptivity toward distance learning? Would an individual's culture affect his or her media preference for distance learning? Would culture affect an individual's course type preference for distance learning? They used four of Wager's (1995) five facets. They are Stand Alone, Win above All, Individual Thinking, and Group Preference. They examined cultural value influence on

receptivity of distance learning using two independent variables which are course type and media type; course type was categorized as a major or non-major course and media type was divided as interactive or non-interactive media. The results showed that individualists and collectivists differed on two aspects Stand Alone and Win above All in their receptivity towards distance learning. However, Individual Thinking and Group Preference aspects did not show the difference in their receptivity. The findings also revealed that individualists are more likely to consider distance learning that uses both interactive and non-interactive media. However, the relationships were stronger for use of interactive communication. In course type preference, individualists would consider distance learning for major course types and collectivists would consider distance learning for non-major course types.

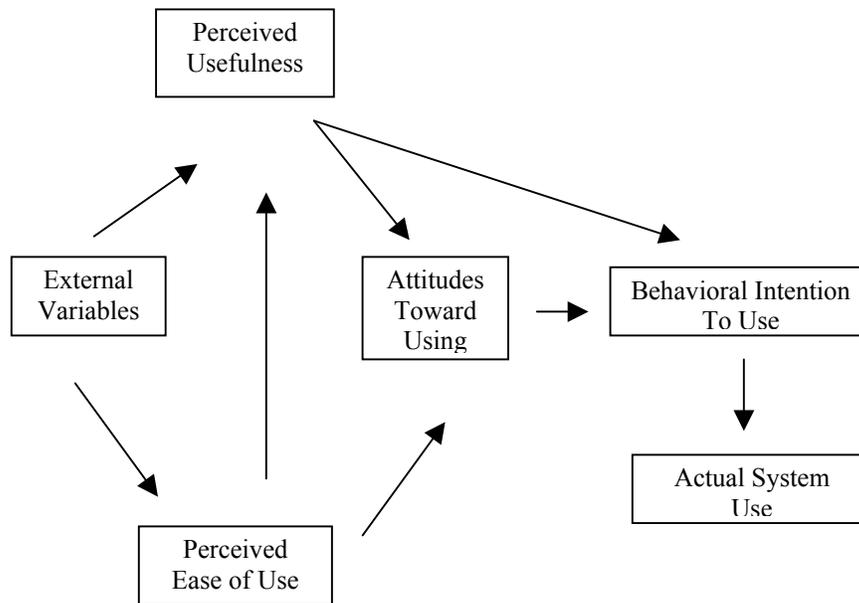
### **Technology Acceptance Model**

#### **Definition**

Davis (1989) developed the technology acceptance model (TAM), which is used to describe the relationship between the independent variables of perceived usefulness and perceived ease of use along with the dependent variables of user attitudes, intentions, and computer usage behavior. Davis (1989) reasoned that an individual's beliefs with regard to the perceived usefulness and perceived ease of use would influence their attitudes towards use, resulting in an intention to use that in turn resulted in actual use. According to Davis (1989), perceived usefulness is defined as the extent to which a person believes that the technology will help them perform their jobs better. Perceived

ease of use refers to the degree to which a person believes that using a particular technology would be free of effort. Davis's (1989) model is shown in Figure 1.

**Figure 1. Technology Acceptance Model**



### **National Culture and Technology Acceptance Model**

TAM is the most widely cited and influential model used for explaining the acceptance of information technology. However, the potential influence of national culture on information technology acceptance has not been featured prominently in technology acceptance research (Veiga, Floyd, & Dechant, 2001).

Straub (1994) raised the issue of cultural effect on information technology diffusion. With respect to the TAM and cultural influence, Straub (1994) found that

Japanese knowledge workers showed lower perceptions of usefulness and lower usage of e-mail in comparison to US workers.

Pointing out that TAM studies were mostly conducted in North America, Gahtani (2001) investigated if TAM was applicable to Western Europe culture. The empirical findings strongly supported the applicability of TAM in the United Kingdom (UK) culture. In other words, the TAM general structure appeared to hold for the UK culture. Rose and Straub (1998) also tested TAM in five Arab nations of the Middle East. TAM transferred successfully to the Arab culture.

However, utilizing Hofstede's cultural dimension, Straub, Keil, and Brenner (1997) have produced inconsistent results. They compared the TAM across three different countries: Japan, Switzerland, and the United States, and showed that TAM provided explanations for information technology adoption and use in two of the three countries, the U.S. and Switzerland. They suggested the TAM might not hold equally well across all cultures. Japan displays cultural tendencies that tend towards more uncertainty avoidance, greater power distances between managers and workers, collectivist sentiments. Their tendencies may limit information technology use and prevent its adoption.

Veiga, Floyd, and Dechant (2001) offered a series of research propositions that explored the potential impact of differences in national culture on information technology (IT) implementation and acceptance. The perception of the IT will most likely change when people realize that it is enhancing the performance of individuals in individualistic cultures at the same time it is enhancing the performance of groups in

collectivistic cultures. The mastery of the computer will be based on a person's experiences with IT in an individualistic culture while on a collective experience of the user's work group with IT in collectivist cultures.

Meanwhile, The relationship between perceived technology usefulness and distance-learning receptivity never been explored even though the fact that distance learning is technology driven has been recognized. Christensen, Anakwe, and Kessler (2001) primarily found that perceived technology usefulness was positively and significantly related to distance learning receptivity.

## **CHAPTER III**

### **METHODOLOGY**

Data were collected with the use of a questionnaire designed to acquire information to answer the research questions enumerated in Chapter I. The questionnaire was mostly adopted from earlier literature concerning the measurement of differences in: (1) cultural values, (2) distance-learning receptivity, (3) perceived technology usefulness, and examine relationships between distance-learning receptivity and perceived technology usefulness. The procedures for carrying out the research are presented in this chapter and include: (1) population and subject selection, (2) instrument development, (3) data collection, and (4) data analysis are described.

#### **Population and Subject Selection**

American and Korean graduate students enrolled at Texas A&M University during fall 2003 semester were identified as the available population to be considered. According to Office of Institutional Studies and Planning (2003), there were approximately 4700 American graduate students and 600 Korean graduate students. Therefore, the total accessible population was approximately 5300. Thus, 88% of the population were American students and 12% of the population were Korean students. To determine the sample size needed to represent the given population, a proportion formula table developed by Krejcie and Morgan (1970) was used. Since the required sample size was 358, the investigator decided to distribute questionnaires to 15% of the total population anticipating a 50% return rate. Thus, the selected sample size was

780. Considering the portion of each group, 686 American graduate students and 94 Korean graduate students were selected randomly.

### **Variables**

The comparison variables identified in this study were: (1) nationality and (2) cultural value tendency, which represents Individualism or Collectivism. The dependent variables identified in the study were: (1) distance learning receptivity as a communication media, (2) distance learning receptivity as a technology, (3) perceived technology usefulness. In addition, demographic variables of age, gender, family, marital status, student degree level, employment status, and distance learning experience were recorded to test the normative aspect of the data and provide insight into individual characteristics of subjects.

### **Procedures for Gathering the Data**

The researcher collected data using an online technique. To obtain student e-mail addresses, the researcher contacted personnel at the Student Information Management System (SIMS) at Texas A&M University. The system has a student information data bank which includes individual background data such as nationality and e-mail addresses and then the researcher requested a release of American and Korean graduate students e-mail addresses to be used for research purpose only. SIMS personnel approved releasing the information and the staff at SIMS ran the Statistical Analysis System (SAS) program to randomly select the sample.

The researcher developed an instrument as HTML format and posted it on the World Wide Web. Using group mail software, an invitation e-mail message (see Appendix A) was sent to individual prospective participants. The e-mail message had a link to an information sheet (see Appendix B). When participants understood the study, voluntarily filled out their e-mail identification, and clicked the agree button, it automatically connected them to the electronic questionnaire (see Appendix C). To maintain confidentiality, the data from each participant were sent directly to the secure server at Center for Distance Learning Research (CDLR), which is a part of Texas A&M University. For tracking responses, the researcher sent the invitation e-mail twice to remind individuals to participate.

### **Instrumentation**

The questionnaire was adopted from the literature and was comprised of five sections (see Appendix C). A five-point and seven-point Likert scale was used for each item on the questionnaire.

#### **Section I: Cultural Values (Tendency)**

To measure a personal difference of cultural values between American and Korean graduate students, the researcher adopted the Individualism-Collectivism Scale (ICS) developed and validated by Wagner (1995). The ICS consists of 20 items that include five facet subscales. Higher scores indicate more agreement i.e. 1 is strongly disagree, 2 is disagree to some extent, 3 is neutral, 4 is agree to some extent, and 5 is

strongly agree. The first five items represent the “Stand Alone” factor that is used to assess personal independence and self-reliance. An example item of the Stand Alone factor is “to be superior a person must stand alone”. Items 6 through 10 represent Factor 2, “Win above All” that address the importance accorded to competitive success. “Winning is everything” is an example of the Win Above All factor. The Group Sacrifice factor included items 11 through 13 that are concerned with the value attached to Working Alone. The Group Preference factor is made up of four items that measure espousal of norms about the subordination of personal needs to group interests; and the last factor, Individual Thinking, consists of the last three items that are used to assess beliefs about the effects of personal pursuits on group productivity. Anakwe, Kessler, and Christensen (1999) assured the validity and reliability of each sub scale. Even though reliability and construct validity of the instrument were established in the previous literature, reliability coefficients were calculated. The reliability coefficients obtained from the present administrator were .77, .81, .76, .83, and .87. Factor analysis was also employed to reconfirm the empirical validity of the instrument for this study.

## **Section II: Distance-learning Receptivity**

To measure distance-learning receptivity and perceived usefulness of technology, items were adopted from a distance learning survey developed by Christensen, Anakwe, and Kessler (1999, 2001). Section II consisted of questions relating to three areas of importance for distance learning. To measure distance-learning

receptivity, questions are comprised of subject types, media types, and course types that participants would consider as they take distance learning.

According to Anakwe, Kessler and Christensen (1999), each media and course type was separated with two factors. Media types were categorized with interactive and non-interactive media. Course types were classified with major and non-major course. Each of the reliability coefficients was .92, .83, .78, and .86. In Section II, the researcher also conducted factor analysis for validity.

### **Section III: Perceived Technology Usefulness**

To measure perceived technology usefulness, Section III was comprised of questions that asked how useful a participant felt different media types would be for distance learning. Higher scores indicate more useful i.e. 1 is not useful, 2 is slightly useful, 3 is moderately useful, 4 is useful, and 5 is very useful. The presented media were Internet, WWW, E-mail, video-conferencing, chat rooms, audiotape, videotape, and U.S. mail. According to Christensen, Anakwe, and Kessler (2001), only one factor was revealed. Factor analysis was used to reconfirm the validity.

### **Section IV: Technology Familiarity**

To measure technology familiarity and to examine prior distance learning experience, Section IV consisted of questions relating to how much time a participant had spent on and how often one used the different technologies, as well as if one had a previous experience of distance learning.

## **Section V: Background Information**

Section V included general demographic information such as gender, age, marital status, employment status, student degree level, GPA, family, ethnicity, and academic department.

### **Overview of Statistical Procedures**

The collected data were analyzed through the statistics software of SPSS Version 11.0. An alpha level ( $\alpha$ ) of 0.05 was utilized for all statistical tests. The corresponding statistical techniques adopted for different purposes are listed below:

1. **Content Validity and Reliability:** The content validity of the questionnaire has already been conducted by Wagner (1995) and Anakwe, Kessler, and Christensen (1999, 2001). However, to reconfirm the validity of the instrument for this research data, factor analysis was conducted for Sections I, II, and III. The reliability of the questionnaire was assessed by examining internal consistency of items in the survey instrument. Utilizing the questionnaire responses, Cronbach's alpha was calculated for each sub scale.
2. The median was used to classify the participants who had Individualism or Collectivism tendencies in each of the five facets of the cultural value scale; respondents who scored above the median were categorized as Individualists and those who scored below the median were categorized as Collectivists.
3. Multivariate of Analysis of Variance (MANOVA) and univariate Analysis of Variance (ANOVA) were used to find the answer to Research Question 1.

4. Two-way ANOVA was used to answer Research Question 2 through 4.
5. Pearson Correlation coefficients were used to answer Research Question 5.
6. Multiple Linear Regression was conducted with demographic factors, technology familiarity, and prior experience of distance learning for Research Question 6.

## **CHAPTER IV**

### **RESEARCH FINDINGS**

The purpose of this study was to determine differences in distance-learning receptivity and perceived technology usefulness between American and Korean graduate students.

The findings with respect to (1) population and sample, (2) instrumentation, (3) descriptive data, and (4) data analyses are described in this chapter. Research objectives are addressed and the results of the research questions testing are presented.

#### **Population and Sample**

The accessible population of this study was American and Korean graduate students at Texas A&M University. A total of 5300 individuals were identified as the accessible population in this study. The selected subjects were 780 graduate students who enrolled during the fall semester of 2003. Respondents to the questionnaire were 350. This response rate represented an overall return of 44.9%. American students numbered 256 and Korean students numbered 94. According to Krejcie and Morgan (1970), the required sample size was approximately 358 to represent a population of 5300. The number of 350 represented 97.8% of the needed sample and therefore it was reasonable to conduct this study.

## Instrumentation

### Reliability

In Section I of the Questionnaire, twenty items were used to investigate cultural values of participants. In order to reconfirm the five-factor structure of the Individualism-Collectivism Scale (ICS) reported in the study by Wagner (1995), an exploratory principal-component analysis (PCA) with Varimax rotation was conducted. The factor analysis resulted in five factors and a summary of the PCA is presented in Table 2. Since the obtained factors were the same as those presented by Wagner (1995), the factors were named the same as the previous research. Each item loaded on only one factor and the smallest value for the factor loading for any item was .615. The five factors and the items for each factor are similar to those identified by Wagner (1995).

**Table 2. Individualism-Collectivism: Rotated Solution of Exploratory Factor Analysis**

Factor	Item Numbers	Range of Loadings	Eigenvalue	Explained Variance
1. Win above All	6-10	.628-.808	2.862	14.312
2. Sacrifice in Group	14-17	.651-.851	2.812	14.058
3. Stand Alone	1-5	.615-.791	2.694	13.471
4. Individual Thinking	18-20	.816-.881	2.497	12.486
5. Group Preference	11-13	.756-.829	2.150	10.752

*Note.* Items 11, 13-17 were reverse-coded to preserve consistent directionality, with high values indicating high individualism.

An exploratory principal-component analysis with varimax rotation was also conducted to reconfirm the Distance-Learning Receptivity Scale (DLRS). In Section II B

of the Questionnaire, ten items were addressed regarding media type that participants would consider using for distance learning. The results confirmed the reliabilities and factor structure of the study by Anakwe, Kessler, & Christensen (1999). Two types of media are shown in Table 3. Seven of ten items were loaded on interactive media factor. Internet, World Wide Web (WWW), news groups, electronic bulletin boards. E-mail, video conferencing, and chat rooms were examples of interactive media. The examples of non-interactive media were U.S. mail, videotape, and audiotape.

**Table 3. Media Type: Rotated Solution of Exploratory Factor Analysis**

	Items Numbers	Range of Loadings	Eigenvalue	Explained Variance
Interactive	1-7	.423-.835	3.877	38.773
Non-interactive	8-10	.709-.893	2.227	22.267

In Section II C of the Questionnaire, eleven items were used to examine preferred course type that participants would consider taking through distance learning. The results indicated major and non-major course types. The reliabilities and factor structure were the same as the study of Anakwe, Kessler, and Christensen (1999). As presented in Table 4, six items were loaded on the major course type factor and the other five items were loaded on the non-major course type factor.

**Table 4. Course Type: Rotated Solution of Exploratory Factor Analysis**

Factor	Items Numbers	Range of Loadings	Eigenvalue	Explained Variance
Major	1,3-5,7,11	.597-.830	3.370	30.640
Non-major	2,6,8-10	.612-.816	3.203	29.120

Eight items in Section III of the Questionnaire were used to determine how useful participants felt different media types would be for distance learning. An exploratory principal-component analysis with varimax rotation was also conducted. According to Christensen, Anakwe, and Kessler (1999), only one factor was revealed. However, the obtained results presented in Table 5 indicate that for this sample there are three factors in perceived usefulness. Internet, WWW, and E-mail were loaded on advanced technology factor. Video-conferencing and chat room were loaded on contemporary technology. Finally, audiotape, videotape, and U.S. mail were loaded on traditional technology.

**Table 5. Technology Type: Rotated Solution of Exploratory Factor Analysis**

Factor	Item numbers	Range of Loadings	Eigenvalue	Explained Variance
Advanced	1-3	.659-.949	2.646	33.071
Contemporary	4-5	.794-.816	2.042	25.523
Traditional	6-8	.719-.872	1.098	13.725

### **Descriptive Data: Demographic Factors**

The demographic statistics are summarized in Table 6. American students who participated in this study totaled 256 (73.1%) and Korean students totaled 94 (26.9%). Most of the American students described themselves as Caucasian (n=195). A few more male students (n=190, 54.3%) participated than female students. Most respondents were between the ages of 20 to 30. Married students (n=191, 54.6%) outnumbered never married or others. More than 50 percent (54.9%) of the respondents (n=192) were doctoral students and most had full or part time work (n=290, 82.8%). One-third of the respondents (n=105, 30%) had never experienced distance learning, but the others had experienced distance learning at least one time before they participated in this study.

**Table 6. Descriptive Statistics of Respondents' Demographic Factors**

Factors		n	Percent
Nationality	U.S.A	256	73.1
	Korea	94	26.9
Ethnicity	African American	10	2.9
	Asian	98	28.0
	Caucasian	195	55.7
	Hispanic	33	9.4
	Native American	2	0.6
	Other	8	2.3
	Missing	4	1.1
Gender	Male	190	54.3
	Female	160	45.7
Age	20-29	131	37.4
	30-39	124	35.4
	Above 40	85	24.3
	Missing	10	2.9
Marital status	Never married	130	37.1
	Married	194	55.4
	Divorced/Separated	26	7.4
Degree level	Masters	155	44.3
	Doctoral	195	55.7
Employment status	Full-time	176	50.3
	Part-time	114	32.6
	Not employed	60	17.1
Number of Children	None	192	54.9
	More than one	158	45.1
Distance learning experience	Never taken	105	30.0
	1-2 times	137	39.1
	More than 3 times	108	30.9

## Answers to Research Questions

### Research Question 1

*Are there differences in cultural values between American and Korean graduate students?*

- a. Do American and Korean graduate students differ in the cultural value of Stand alone?
- b. Do American and Korean graduate students differ in the cultural value of Win above all?
- c. Do American and Korean graduate students differ in the cultural value of Sacrifice in group?
- d. Do American and Korean graduate students differ in the cultural value of Group preference?
- e. Do American and Korean graduate students differ in the cultural value of Individual thinking?

These questions were tested using Multivariate Analysis of Variance (MANOVA) with nationality identified as the independent variable and cultural values as dependent variables. The result of MANOVA for the five cultural values was statistically significant,  $\Lambda = .731$ ,  $F(5, 344) = 25.37$ ,  $p = .00$ . The result indicated that the cultural values varied across the two graduate student groups.

To test the group differences individually for each of the cultural values, five Univariate Analysis of Variance (Univariate ANOVA) tests were conducted. As the number of Univariate tests increases, the inflation of the Type I error ( $\alpha$ ) should be

considered (Glass & Hopkins, 1996; Hair, Anderson, Tatham, & Black, 1995). To control the inflation, Hair et al.(1995) recommended the use of critical value of  $T^2$ . The  $T^2_{crit}$  is the standard for comparing F values from the Univariate ANOVA to judge their significance. This method would help to ensure that the probability of any Type I error across all the tests would be held to  $\alpha$  (Hair et al., 1995).  $T^2_{crit}$  can be calculated by utilizing Equation 1.

$$(1) T^2_{crit} = \{ \# \text{ of group} \times ( N1 + N2 - 2 ) \} / ( N1 + N2 - \# \text{ of group} - 1 ) \times F_{crit}$$

The calculated  $T^2_{crit}$  for this analysis was 7.76. The results of Univariate ANOVA for the cultural values are presented as Table 7. The means of American students for Group Sacrifice and Individual Thinking values were significantly different with Korean graduate students. Both F values of these two tests were above the  $T^2_{crit}$  previously computed as 7.76, which indicates the values are significant at .05  $\alpha$  level after controlling the inflation of the Type I error.

**Table 7. Summary of Analysis of Variance for Each Cultural Value**

Cultural values	<i>df</i>	F	p
Stand Alone	1, 348	0.34	.56
Win Above All	1, 348	0.24	.62
Group Sacrifice	1, 348	17.25*	.00
Group Preference	1, 348	1.02	.31
Individual Thinking	1, 348	94.71*	.00

*Note.* \*  $p < .05$ .

The mean and standard deviation of each nationality group for the cultural values are shown in Table 8. For the Group Sacrifice value, the mean of American students was higher than Korean students. On the other hand, the mean of Korean students for the Individual Thinking value was higher than American students.

**Table 8. Means and Standard Deviations for Cultural Values**

Cultural values		Overall	American Student	Korean Student
			n = 256	n = 94
Stand Alone	M	2.80	2.81	2.75
	SD	.85	.84	.88
Win Above All	M	2.46	2.45	2.50
	SD	.85	.86	.82
Group Sacrifice	M	2.87	2.99	2.56
	SD	.87	.88	.75
Group Preference	M	1.94	1.92	2.00
	SD	.64	.65	.63
Individual Thinking	M	2.26	1.98	3.02
	SD	1.00	.85	1.00

## Research Question 2

*Are there differences in receptivity of distance learning as a communication media, with considering nationality and cultural value tendency?*

- a. Are there differences in receptivity of distance learning with interactive media between American and Korean graduate students?
- b. Are there differences in receptivity of distance learning with interactive media between individualists and collectivists (Stand alone, Win above all, Sacrifice in group, Group preference, and Individual thinking)?
- c. Is there significant interaction effect between nationality and cultural value

tendency in receptivity of distance learning with interactive media?

- d. Are there differences in receptivity of distance learning with non-interactive media between American and Korean graduate students?
- e. Are there differences in receptivity of distance learning with non-interactive media between individualists and collectivists (Stand alone, Win above all, Sacrifice in group, Group preference, and Individual thinking)?
- f. Is there significant interaction effect between nationality and cultural value tendency in receptivity of distance learning with non-interactive media?

To define the students who were individualist or collectivist, the medians of each group for the five separate cultural values were utilized. The medians of American and Korean graduate students for each cultural value are shown in Table 9.

**Table 9. Medians of American and Korean Students for Cultural Values**

Cultural values	American Student	Korean Student
	N=256	N=94
Stand Alone	2.80	2.80
Win Above All	2.40	2.40
Group Sacrifice	3.00	2.50
Group Preference	2.00	2.00
Individual Thinking	2.00	3.00

In each cultural value, an individual possessing a score greater than the given median was classified as a person who shows individualism. If an individual possessed a score that was equal to or lower than the median, he (she) was classified as a person who

tends to be a collectivist. Every student, therefore, had five unique classifications for the cultural values.

The cross tabulation of the nationality and the cultural value tendency, which describes individualism or collectivism at each cultural value, is presented as Table 10.

**Table 10. The Cross Tabulation Frequencies for Nationality and the Cultural Value Tendency**

Cultural values	American Students		Korean Students	
	Individualism	Collectivism	Individualism	Collectivism
Stand Alone	134	122	48	46
Win Above All	137	119	48	46
Group Sacrifice	162	94	47	47
Group Preference	195	61	63	31
Individual Thinking	182	74	52	42

Research Question 2 was tested using two-way Analysis of Variance (ANOVA). The independent variables were nationality and the cultural value tendency. The dependent variables were preference for two types of the receptivity of distance learning, which were media types and course types. The media types were divided as interactive or non-interactive media and course types as major or non-major course.

**Table 11. Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as an Interactive Media**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	p	F (df)	p	F (df)	p	F (df)	p	F (df)	p
Nationality	5.89*	.02	5.45*	.02	4.46*	.04	5.69*	.02	4.25*	.04
	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	
Tendency	.41	.52	.42	.52	5.97*	.02	1.49	.22	1.07	.30
	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	
N X T	1.28	.26	1.21	.27	.11	.74	.08	.77	.14	.71
Interaction	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	

*Note.* \*  $p < .05$ .

A summary of the results of two-way ANOVA for the receptivity of distance learning as an interactive media are shown in Table 11. The descriptive statistics of the dependent variable were presented as Table 12.

A significant nationality effect was found for the receptivity of distance learning as an interactive media. Thus, the results indicated that the American students and Korean students differed with each other in terms of receiving distance learning as an interactive media. The receptivity of distance learning significantly differs for the Individualist and Collectivist groups only at Group Sacrifice.

**Table 12. Means and Standard Deviations of the Receptivity of Distance Learning as an Interactive Media**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	3.76	.76	3.81	.80	3.85	.71	3.70	.80	3.80	.83
American	3.79	.82	3.89	.84	3.89	.76	3.76	.84	3.85	.86
Korean	3.67	.60	3.56	.64	3.72	.52	3.55	.68	3.61	.70
Collectivist	3.74	.84	3.69	.80	3.61	.90	3.84	.79	3.65	.73
American	3.84	.88	3.72	.85	3.69	.97	3.91	.85	3.71	.81
Korean	3.50	.67	3.61	.64	3.45	.71	3.64	.56	3.55	.55
Total	3.75	.80	3.75	.80	3.75	.80	3.75	.80	3.75	.80
American	3.81	.84	3.81	.84	3.81	.84	3.81	.84	3.81	.84
Korean	3.58	.64	3.58	.64	3.58	.64	3.58	.64	3.58	.64

According to Table 12, American students were more receptive to distance learning as an interactive media than Korean students. In the Group Sacrifice, Individualists were more receptive of the distance learning as an interactive media than Collectivists. None of the interactions between nationality and cultural value tendency was significant.

A summary of the two-way ANOVA for the receptivity of distance learning as a non-interactive media is presented as Table 13. The means and standard deviations of the receptivity of distance learning as a non-interactive media are also presented as Table 14. None of main effects, nationality and cultural value tendency, was statistically significant for the receptivity of distance learning as non-interactive media. Also the interactions between nationality and cultural value tendency were not significant.

**Table 13. Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as a Non-interactive Media**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	P	F (df)	p	F (df)	p	F (df)	p	F (df)	p
Nationality	.02 (1, 346)	.90	.02 (1, 346)	.90	.00 (1, 346)	.98	.00 (1, 346)	.98	.06 (1, 346)	.80
Tendency	.96 (1, 346)	.33	.10 (1, 346)	.75	.02 (1, 346)	.89	.05 (1, 346)	.83	.07 (1, 346)	.79
N X T Interaction	1.60 (1, 346)	.21	.55 (1, 346)	.46	1.17 (1, 346)	.28	.39 (1, 346)	.53	.28 (1, 346)	.60

**Table 14. Means and Standard Deviations of the Receptivity of Distance Learning as a Non-interactive Media**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	2.50	1.04	2.52	1.02	2.54	.98	2.54	.99	2.52	.99
American	2.54	1.08	2.55	1.07	2.57	1.01	2.56	1.04	2.52	1.02
Korean	2.38	.90	2.44	.87	2.43	.86	5.49	.86	2.55	.89
Collectivist	2.55	.95	2.52	.97	2.50	1.03	2.48	1.00	2.51	1.01
American	2.51	.98	2.50	1.00	2.45	1.08	2.46	1.03	2.55	1.07
Korean	2.64	.86	2.57	.90	2.58	.91	2.54	.92	2.45	.89
Total	2.52	1.00	2.52	1.00	2.52	1.00	2.52	1.00	2.52	1.00
American	2.53	1.04	2.53	1.04	2.53	1.04	2.53	1.04	2.53	1.04
Korean	2.51	.88	2.51	.88	2.51	.88	2.51	.88	2.51	.88

**Research Question 3**

*Are there differences in receptivity of distance learning as a technology, with considering nationality and cultural value tendency?*

- a. Are there differences in receptivity of distance learning as major course between American and Korean graduate students?
- b. Are there differences in receptivity of distance learning as major course between

Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?

- c. Is there significant interaction effect between nationality and cultural value tendency in receptivity of distance learning as major course?
- d. Are there differences in receptivity of distance learning as non-major course between American and Korean graduate students?
- e. Are there differences in receptivity of distance learning as non-major course between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?
- f. Is there significant interaction effect between nationality and cultural value tendency in receptivity of distance learning as non-major course?

Research Question 3 was also tested by two-way ANOVA.

**Table 15. Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as Major Course**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	p	F (df)	p	F (df)	p	F (df)	p	F (df)	p
Nationality	40.57*	.00	40.24*	.00	40.66*	.00	36.07*	.00	34.01*	.00
Tendency	.27	.60	1.24	.27	.07	.79	.02	.89	.08	.78
N X T	.01	.92	2.15	.14	.07	.79	.10	.67	1.35	.25
Interaction	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	

*Note.* \*  $p < .05$ .

According to Table 15, the only significant nationality effect was found for the receptivity of distance learning as a major course. The American students and Korean students differed with each other for the receptivity of distance learning as a major course.

**Table 16. Means and Standard Deviations of the Receptivity of Distance Learning as a Major Course**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	2.98	1.03	2.90	1.09	3.02	.98	3.02	1.01	3.07	1.07
American	3.19	1.00	3.23	1.08	3.19	.96	3.24	1.00	3.26	1.09
Korean	2.41	.90	2.29	.81	2.44	.80	2.43	.77	2.39	.68
Collectivist	3.03	1.07	3.02	1.01	2.89	1.16	2.98	1.12	2.87	1.00
American	3.24	1.12	3.19	1.04	3.25	1.21	3.16	1.14	3.08	.96
Korean	2.48	.72	2.60	.79	2.44	.83	2.47	.88	2.50	.95
Total	3.00	1.05	3.00	1.05	3.00	1.05	3.00	1.05	3.00	1.05
American	3.21	1.06	3.21	1.06	3.21	1.06	3.21	1.06	3.21	1.06
Korean	2.44	.81	2.44	.81	2.44	.81	2.44	.81	2.44	.81

American students consider distance learning as major course more than Korean students. On the other hand, the cultural value tendency was not a significant factor for the receptivity of distance learning as a major course and none of the interactions between nationality and cultural value tendency was significant.

The means and standard deviations of the receptivity of distance learning as a major course are shown in Table 16.

According the Table 17, the nationality effect was only significant regarding the receptivity of distance learning as non-major course, The American students and Korean

students were different in terms of the receptivity of distance learning as non-major course.

**Table 17. Summary of Two-Way Analysis of Variance for the Receptivity of Distance Learning as Non-major Course**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	P	F (df)	p						
Nationality	19.94* (1, 346)	.00	19.55* (1, 346)	.00	17.65* (1, 346)	.00	19.55* (1, 346)	.00	16.38* (1, 346)	.00
Tendency	.95 (1, 346)	.33	.54 (1, 346)	.47	1.69 (1, 346)	.19	.95 (1, 346)	.33	1.93 (1, 346)	.17
N X T Interaction	.05 (1, 346)	.83	.66 (1, 346)	.42	.25 (1, 346)	.62	.19 (1, 346)	.67	.08 (1, 346)	.78

Note. \*  $p < .05$ .

**Table 18. Means and Standard Deviations of the Receptivity of Distance Learning as Non-major Course**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	3.86	.79	3.87	.85	3.90	.79	3.77	.85	3.89	.86
American	3.97	.82	4.01	.89	4.00	.80	3.88	.91	3.99	.91
Korean	3.55	.56	3.48	.54	3.53	.63	3.47	.59	3.54	.57
Collectivist	3.77	.92	3.75	.86	3.70	.93	3.89	.85	3.67	.82
American	3.90	.99	3.85	.92	3.82	1.06	4.03	.90	3.81	.90
Korean	3.43	.59	3.49	.62	3.45	.52	3.52	.57	3.42	.59
Total	3.82	.85	3.82	.85	3.82	.85	3.82	.85	3.82	.85
American	3.94	.91	3.94	.91	3.94	.91	3.94	.91	3.94	.91
Korean	3.49	.58	3.49	.58	3.49	.58	3.49	.58	3.49	.58

According to the Table 18, more American students want to take the distance learning as non-major course than the Korean students. The cultural value tendency was not a significant factor for the receptivity of distance learning as a non-major course and significant interactions between nationality and cultural value tendency were not detected.

#### **Research Question 4**

*Are there differences in perceived technology usefulness, with considering nationality and cultural value tendency?*

- a. Are there differences in perceived technology usefulness between American and Korean graduate students?
- b. Are there differences in perceived technology usefulness between Individualists and Collectivists (Stand Alone, Win above All, Sacrifice in Group, Group Preference, and Individual Thinking)?
- c. Is there significant interaction effect between nationality and cultural value tendency in perceived technology usefulness?

Research Question 4 was examined via two-way ANOVA. Nationality and the cultural value tendency were considered as independent variables, and perceived usefulness of three types of technology, i.e. advanced, contemporary, and traditional technology usefulness, as the dependent variables. The results of two-way ANOVA for the advance technology usefulness are shown in Table 19.

**Table 19. Summary of Two-Way Analysis of Variance for the Advanced Technology Usefulness**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	p	F (df)	p	F (df)	p	F (df)	p	F (df)	p
Nationality	9.96* (1, 346)	.00	10.01* (1, 346)	.00	8.58* (1, 346)	.00	7.15* (1, 346)	.01	6.70* (1, 346)	.01
Tendency	2.58 (1, 346)	.11	1.33 (1, 346)	.25	.99 (1, 346)	.32	1.49 (1, 346)	.22	7.32* (1, 346)	.01
N X T Interaction	.02 (1, 346)	.88	.23 (1,346)	.63	.40 (1, 346)	.53	1.89 (1, 346)	.17	.12 (1, 346)	.73

Note. \*  $p < .05$ .

The means and standard deviation of the advanced technology usefulness are shown in Table 20. American students significantly differed with Korean students for the degree of perceived usefulness of the advanced technology such as Internet, World Wide Web and E-mail. The American students perceived the given technologies more useful than the Korean students. Only the Individualists at the Group Sacrifice cultural value were different from Collectivists for recognizing the usefulness of the advanced technologies. Individualists perceived the technologies more useful than Collectivists. The interactions between nationality and cultural value tendency were not statistically significant.

**Table 20. Means and Standard Deviations of the Advanced Technology Usefulness**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	4.57	.60	4.54	.64	4.56	.61	4.49	.68	4.59	.58
American	4.64	.54	4.60	.64	4.62	.61	4.58	.67	4.65	.58
Korean	4.38	.71	4.39	.63	4.34	.55	4.25	.63	4.41	.55
Collectivist	4.44	.71	4.47	.67	4.43	.72	4.54	.62	4.34	.76
American	4.50	.77	4.55	.68	4.49	.73	4.57	.64	4.40	.81
Korean	4.29	.48	4.26	.59	4.31	.68	4.46	.56	4.42	.67
Total	4.51	.66	4.51	.66	4.51	.66	4.51	.66	4.51	.66
American	4.57	.66	4.57	.66	4.57	.66	4.57	.66	4.57	.66
Korean	4.33	.61	4.33	.61	4.33	.61	4.33	.61	4.33	.61

The summary of a two-way ANOVA for the contemporary technology usefulness are presented in Table 21. The means and standard deviations are shown in Table 22. American students significantly differed from Korean students for perceived usefulness of the contemporary technology such as video-conferencing and chat rooms. The American students considered the given technologies more useful than the Korean students. Only the Individualists at the Group Sacrifice cultural value were different from Collectivists for the recognized usefulness of the contemporary technologies. Individualists perceived the technologies more useful than Collectivists. The interactions between nationality and cultural value tendency were not statistically significant.

**Table 21. Summary of Two-Way Analysis of Variance for the Contemporary Technology Usefulness**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	P	F (df)	p	F (df)	p	F (df)	p	F (df)	p
Nationality	17.89*	.00	17.62*	.00	14.91*	.00	16.64*	.00	14.98*	.00
	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	
Tendency	.10	.75	.77	.38	6.62*	.01	.21	.65	.57	.45
	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	
N X T Interaction	.58	.45	.52	.47	.01	.93	.02	.90	.12	.73
	(1, 346)		(1, 346)		(1, 346)		(1, 346)		(1, 346)	

Note. \*  $p < .05$ .

**Table 22. Means and Standard Deviations of the Contemporary Technology Usefulness**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	3.53	.98	3.50	1.00	3.66	.90	3.50	.94	3.58	.94
American	3.63	.98	3.64	1.00	3.76	.90	3.63	.95	3.69	.94
Korean	3.24	.94	3.09	.91	3.32	.84	3.17	.85	3.20	.87
Collectivist	3.53	.91	3.55	.88	3.32	.97	3.56	.95	3.42	.94
American	3.68	.89	3.66	.86	3.46	.97	3.69	.92	3.56	.93
Korean	3.12	.84	3.27	.87	3.04	.92	3.21	.97	3.15	.92
Total	3.52	.94	3.52	.94	3.52	.94	3.52	.94	3.52	.94
American	3.65	.94	3.65	.94	3.65	.94	3.65	.94	3.65	.94
Korean	3.18	.89	3.18	.89	3.18	.89	3.18	.89	3.18	.89

A summary of two-way ANOVA for the traditional technology usefulness are presented in Table 23. The means and standard deviations of the degree of perceiving the traditional technology such as audiotape, videotape and U. S. Mail are shown in Table 24. None of the factor effects and their interactions were statistically significant.

**Table 23. Summary of Two-Way Analysis of Variance for the Traditional Technology Usefulness**

Source	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	F (df)	P	F (df)	p	F (df)	p	F (df)	p	F (df)	p
Nationality	.01 (1, 346)	.91	.00 (1, 346)	.96	.01 (1, 346)	.91	.09 (1, 346)	.76	.00 (1, 346)	.99
Tendency	.13 (1, 346)	.72	.21 (1, 346)	.65	.27 (1, 346)	.61	.25 (1, 346)	.62	.99 (1, 346)	.32
N X T Interaction	3.52 (1, 346)	.06	.04 (1, 346)	.84	.94 (1, 346)	.33	.84 (1, 346)	.36	.53 (1, 346)	.47

**Table 24. Means and Standard Deviations of the Traditional Technology Usefulness**

	Stand Alone		Win Above All		Group Sacrifice		Group Preference		Individual Thinking	
	M	SD	M	SD	M	SD	M	SD	M	SD
Individualist	2.62	1.01	2.61	.98	2.59	.92	2.63	.92	2.62	.97
American	2.67	1.05	2.60	1.02	2.61	.95	2.65	.95	2.60	.99
Korean	2.47	.86	2.63	.87	2.51	.80	2.58	.92	2.69	.88
Collectivist	2.56	.86	2.60	.89	2.60	.97	2.52	.98	2.54	.88
American	2.50	.86	2.57	.90	2.56	1.00	2.48	.99	2.57	.91
Korean	2.72	.85	2.56	.86	2.68	.92	2.63	.94	2.48	.83
Total	2.59	.94	2.59	.94	2.59	.94	2.59	.94	2.59	.94
American	2.59	.97	2.59	.97	2.59	.97	2.59	.97	2.59	.97
Korean	2.60	.86	2.60	.86	2.60	.86	2.60	.86	2.60	.86

**Research Question 5**

*Is perceived technology usefulness associated with receptivity of distance learning?*

To test Research Question 5, Pearson correlation coefficients were calculated among the four types of the receptivity of distance learning as a communication media and a technology and three types of perceived technology usefulness. The correlation coefficients among the variables are shown in Table 25.

**Table 25. Pearson Correlation Coefficients among the Receptivity of Distance Learning and Perceived Technology Usefulness**

	Advanced Technology Usefulness	Contemporary Technology Usefulness	Traditional Technology Usefulness
Interactive media	.56*	.45*	.05
Non-interactive media	.10	.16*	.76*
Major course	.34*	.34*	.04
Non-major course	.34*	.23*	.04

Note. \*  $p < .05$ .

The receptivity of distance learning as an interactive media was moderately related to the advanced and contemporary technology usefulness ( $r = .56, .45$ ). The receptivity of distance learning as a major or non-major course also correlated with them ( $r = .23 \sim .34$ ), which was somewhat lower than the receptivity as an interactive media. These three types of receptivity had no significant relationship with traditional technology usefulness.

The receptivity as a non-interactive media had no significant linear association with the advanced technology usefulness. On the other hand, the receptivity as a non-interactive media was highly related to the traditional technology usefulness ( $r = .76$ ). Even though the correlation between the receptivity as a non-interactive media and contemporary technology usefulness was significant, the presented significance was very low.

**Research Question 6**

*Are there demographic factors that influence distance-learning receptivity and perceived technology usefulness beyond the cultural factor?*

To answer this question, a multiple regression method was applied. All demographic factors were coded as dummy variables. The results of multiple regression, which have the receptivity of distance learning as media type and course type as a dependent variable and various demographic factors as independent variables are shown in Table 26. According to Table 26, Overall  $R^2$  values are low to predict regression equation. However, considering the variables that used in this study only, some of variables were significant in explaining variation in receptivity of distance learning. Gender, the distance learning experience, and employment status were significant variables in explaining variation in the receptivity of distance learning as an interactive media. More experience with distance learning is expected to increase the receptivity of distance learning as an interactive media. Full time employed students considered the distance learning as an interactive media more than half time or unemployed students. However, none of the demographic factors significantly explained variation in the receptivity of distance learning as a non-interactive media.

**Table 26. Beta weights for Multiple Regression on the Receptivity of Distance Learning**

	Interactive Media	Non-interactive Media	Major Course	Non-Major Course
Age	.02	.00	.12*	.18*
Gender	.19*	.08	.12*	.06
Experience	.19*	.08	.29*	.20*
Nationality	.00	.04	-.15*	-.15*
Marital Status	-.08	.05	.01	.07
Number of children	.06	.02	.13	.04
Degree level	-.06	-.05	-.03	-.10
Employment status	-.12*	.08	-.11*	-.06
R	.343	.144	.557	.481
R <sup>2</sup>	.118	.021	.310	.232

According to Table 26, five variables were statistically significant to explain the receptivity of distance learning as a major course. Two of them, age and experience, had positive effects, which means the increase of age and the distance learning experience affect the increase of receptivity as a major course. The regression coefficients of the gender variable were also positive, which means female students' receptivity was greater than that of males. The nationality variable had a negative coefficient, which indicates American graduate students receive the distance learning as major course more than Korean students after controlling other independent variables. The employment status coefficient showed the full time employed students more often considered distance learning as a major course than the other students. In receptivity of non-major course, age and experience had positive effects as same as the results of multiple regression to the receptivity as a major course. The coefficient of nationality variable indicated American graduate students considered distance learning as a non-major course more often than Korean graduate students. The results of multiple regression regarding

perceived technology usefulness were shown in Table 27. Overall  $R^2$  values are low to predict regression equation. In a same way of the distance-learning receptivity, considering the variables used in this study, some of variables were significant in explaining variation in perceived technology usefulness.

**Table 27. Beta weights for Multiple Regression on the Perceived Technology Usefulness**

	Advanced Technology	Contemporary Technology	Traditional Technology
Age	-.02	-.03	-.05
Gender	.10	.18*	.08
Experience	.10	.13*	.06
Nationality	-.17*	-.13*	.01
Marital Status	.10	-.17	-.09
Number of children	-.02	.21*	.15*
Degree level	-.09	-.07	.02
Employment status	.00	.01	.08
R	.319	.344	.149
$R^2$	.101	.118	.022

According to Table 27, the nationality variable was the only significant influencing factor to the usefulness of the advanced technology. American graduate students perceived the advanced technology usefulness such as Internet, World Wide Web, and email more useful than Korean students. Gender, distance learning experience, nationality, marital status, and family were significant to explain the contemporary technology usefulness. Female students showed greater perceived contemporary technology usefulness. Students who had a more experience of distance learning perceived contemporary technology is more useful. American, non-married, and students who have one or more children perceived the contemporary technology more useful than

others. Students who have one or more children perceived the traditional technology as more useful than those who have no child.

## **CHAPTER V**

### **SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS**

This study was designed to determine the influence of cultural value factors on distance-learning receptivity and perceived technology usefulness in selected American and Korean graduate students at Texas A&M University. The study was also undertaken to examine other factors that impact on distance-learning receptivity and perceived technology usefulness beyond cultural factors.

A summary of the purpose, procedures, and major findings of this research study are presented in Chapter V. A discussion of the recommendations for further study is also presented.

#### **Summary**

Technology innovation, cross-cultural issues, and diversity issues in organizations are common themes in HRD. The themes are closely related to distance learning adoption for employee training and development. In other words, advanced technology is accelerating a development of distance learning. As an organization workforce becomes more culturally diverse, distance learning can provide more learning opportunities to employees who are distributed globally.

In addition, the usage of distance learning in an organization is gradually increasing because of its educational effectiveness, business, and economic value (Chute, Thompson, & Hancock, 1999). However, empirical evidence that distance learning is good for everyone is still needed.

The agenda of distance learning research has been mainly focused on history, learning outcomes, learner perceptions, learner attributes, interaction, and technology (Simonson, Smaldino, Albright, & Zvacek, 2000). A few efforts have been devoted to determine if cultural factors influence distance learning. To examine cultural influence, two different cultural groups were selected.

This study sought to answer the following questions:

1. Are there differences in cultural values between American and Korean graduate students?
2. Are there differences in receptivity of distance learning as a communication media?
3. Are there differences in receptivity of distance learning as a technology?
4. Are there differences in perceived technology usefulness?
5. Is perceived technology usefulness associated with receptivity of distance learning?
6. Are there demographic factors influencing on distance-learning receptivity and perceived technology usefulness beyond cultural factor?

A questionnaire was adopted from previous research (Anakwe, Kessler, & Christensen, 1999; Wagner, 1995). The study analyzed participant responses on a survey questionnaire using a Likert scale. The first section of the questionnaire pertained to the respondent answering questions about cultural values. The second section of the questionnaire pertained to the respondent answering questions regarding distance-

learning receptivity. The third section of the questionnaire pertained to the respondent answering questions on perceived technology usefulness. The fourth section of the questionnaire pertained to the respondent answering questions about technology familiarity and distance learning experience, and the last section of the questionnaire consisted of the respondent answering demographic type questions.

American and Korean graduate students who were enrolled during fall 2003 at Texas A&M University were considered as an accessible population. A total of 350 students participated in this study. The questionnaire was disseminated via individual e-mail and the subjects responded through the World Wide Web. The data from each participant were sent automatically to a secure server at University system.

The results of the survey questionnaire were compiled and the statistical analyses were performed. For reliability and validity of the instrument, Cronbach's alpha was calculated and factor analyses were conducted. The median was used to dichotomize the participants into Individualism and Collectivism. MANOVA and univariate ANOVA, two-way ANOVA, Pearson Correlation coefficient, and regression were used to answer the research questions.

## **Statistical Findings**

First, American and Korean graduate students have different cultural values. Considering the five individualism and collectivism subscales, two factors were shown to be different. American students had a higher Group Sacrifice value than Korean students. On the other hand, Korean students had a higher Individual Thinking value than American students.

Second, American and Korean students differed in their receptivity of distance learning as an interactive communication media. American students are more receptive to distance learning as interactive media than Korean students. In the Group Sacrifice only, Individualists were more receptive to the distance learning as an interactive media than Collectivists. There was no interaction effect between nationality and cultural values tendency. However, none of the nationality, cultural value tendency, and interaction effects were significant on receptivity of distance learning as non-interactive communication media.

Third, American and Korean students differed in their receptivity of distance learning as both major and non-major courses. American students were more receptive to distance learning as major and non-major course than Korean students. However, none of cultural values differ on the receptivity between American and Korean students. There was also no interaction effect between nationality and cultural values tendency.

Fourth, American students differed from Korean students regarding the degree of perceiving usefulness of the advanced technology. The American students consider the advanced technology more useful than the Korean students. The Individualists at the

Group Sacrifice cultural value were different from Collectivists for recognizing the usefulness of the advanced technologies. Individualists perceived the technology as more useful than Collectivists. The interactions between nationality and cultural value tendency were not statistically significant. American students were significantly different from Korean students for perceived usefulness of the contemporary technology. The American students consider the contemporary technology more useful than the Korean students. The Individualists at the Group Sacrifice cultural value were different from Collectivists for the recognized usefulness of the contemporary technology. Individualists perceived the technology more useful than Collectivists. The interactions between nationality and cultural value tendency were not statistically significant. None of the nationality, cultural value, and interactions was significant on perceiving traditional technology usefulness.

Fifth, the receptivity of distance learning as an interactive media was related to the advanced and contemporary technology usefulness. The receptivity of distance learning as a major or non-major course correlated with the advanced and contemporary technology usefulness. However, all three types of receptivity had no relationship with traditional technology usefulness. The receptivity as a non-interactive media was highly related to the traditional technology usefulness. The correlation between the receptivity as a non-interactive media and contemporary technology usefulness was significant although it was very low.

Finally, among the demographic factors, experience with distance learning was a significant variable in explaining variation in the receptivity as an interactive media,

major, and non-major course. Experience also was a significant variable in explaining variation in perceived contemporary technology usefulness. Like experience, gender was also a significant variable in explaining variation in the receptivity as an interactive media, major, and non-major course. Gender was a significant variable for perceiving both advanced and contemporary technology usefulness. Age was a significant variable in receptivity as a major and non-major course. Employment status was a significant variable in the receptivity as a major course. Nationality was a significant variable in the receptivity as major and non-major course and in the perceived of advanced and contemporary technology usefulness. However, collecting all the demographic variables that were used in this study was not sufficient to explain the dependent variables.

### **Discussion and Conclusions**

First, nationality and cultural value are very related and the results support the previous literature (Hall & Hall, 1990; Hofstede, 1980). In terms of diversity model, the results also support Shaw and Barret-Power's (1998) model that some underlying attributes are closely correlated with readily detectable attributes. However, the results indicated that the values of each group were not consistent. Korean students showed more individualism in three of the five subvalues: Win Above All, Group Preference, and Individual Thinking. The reason may be explained in terms of acculturation. The Korean students who participated in this study had been studying in America, not their original country. Therefore, it can be concluded that the cultural value of individuals is not static, but changing, when people move from one country to another. In addition, the

Korean participants were all of the young generation. The result confirmed Cha's (1994) conclusion that the value of the young generation in Korea is changing from collectivism to individualism. The reason may also be explained in terms of individual differences. As Triandis (1995) pointed, there are individuals who are countercultural in every society.

Second, nationality influenced the receptivity of distance learning as interactive communication media but cultural values tendency (individualism-collectivism) did not influence receptivity of distance learning as both interactive and non-interactive communication media. The receptivity of distance learning as both major and non-major course type was influenced not by cultural values, but by nationality. It is concluded that cultural values do not impact on receptivity of distance learning. Instead, we can assume that there are some other factors that influence the receptivity. This conclusion differs from Anakwe, Kessler, & Christensen's (1999) conclusion that cultural values influence such receptivity.

Third, like the receptivity of distance learning, nationality influenced the perceived technology usefulness. However, cultural values did not influence the perceived technology usefulness. It is concluded that cultural values were not a significant factor in perceiving technology usefulness.

Fourth, receptivity of distance learning and perceived technology usefulness were closely related. People who perceived technology useful show more receptivity to distance learning. This supported the previous research (Christensen, Anakwe, & Kessler, 2001). In addition, it provided counterevidence that distance learning is technology

driven (Anakwe, Kessler, and Christensen, 1999).

Finally, although overall the power of explanation was low, many factors influenced both receptivity of distance learning and perceived technology usefulness. Experience with distance learning had a positive influence; more experience with distance learning was expected to increase a receptivity of distance learning. People who had more experience with distance learning were more willing to consider distance learning using interactive media, People who had more experience of distance learning were also more ready to take distance learning as major as well as non-major course. Furthermore, if people had experienced distance learning, they perceived that contemporary technology such as videoconferencing and chat rooms were useful for their learning. Experience is critical in distance learning. Once people have experience, distance learning would be favorable to take. In addition, female students were more receptive to distance learning than male students. Full time employed students more often considered distance learning than non-employed students. Older students were more willingly to take distance learning. Finally, distance learning is favorable to female, older, and working graduate students.

## **Recommendations**

Based on the conclusions, recommendations for practitioners and future studies are proposed.

### **Recommendations for Researchers and Practitioners**

First, researchers who are interested in the cross-cultural field of distance learning should find what potential factors influence the differences the receptivity and perceived usefulness between American and Korean group.

Second, administrators and decision makers who want to implement or adopt distance learning for their employees or students need to understand that cultural values, at least individualism and collectivism, are not a significant factor in distance learning. Instead, they should understand the importance of prior experience because people feel that distance is better than they've ever thought once they experience it. In the early stage of adoption, resistance to take a distance leaning may occur if learners have never experienced such type of learning. In that case, persuasion is necessary to involve distance learning.

Third, people are more receptive to distance learning as an interactive media than a non-interactive. As implement distance learning, practitioners should consider interactive media than non-interactive media. In respect to usefulness, advanced and contemporary technologies were perceived more useful than traditional technologies in distance learning. Therefore, practitioners should also consider advanced technology rather than traditional technology in distance learning.

Fourth, distance learning is mostly dependent with technology. Practitioners

should consider that distance-learning technology should be developed in terms of perceived useful to users.

### **Recommendations for future research**

First, it is suggested that Hofstede's other cultural value dimensions should be included in future studies. This research is limited because the individualism and collectivism dimensions were only used. The other dimensions such as power distance, masculinity, and uncertainty avoidance should be included to generalize this study.

Second, although the differences in terms of distance-learning receptivity and perceived technology usefulness were found between the two groups, this study couldn't find what potential factors influenced the difference. Therefore, future studies should consider other factors. For example, As Simonson et al. (2000) mentioned, factors such as personal background, learning style, prior experience, skill level, and motivation should be included.

Third, this study used a sample of university graduate students exclusively, and the students were all from one U.S. University. Future research needs to extend the current findings and test their generalizability to other types of users, for example, undergraduate students or organization employees. The sample size of Korean students was insufficient to represent whole Korean culture; future studies should consider using large samples of Koreans who have never experienced a different culture.

Fourth, this study used American and Korean samples only that might represent only North America and Asian culture. Other national cultures, such as Europe and Arab cultures, should be tested with various cultural dimensions in future study.

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**APPENDIX A**  
**INVITATION EMAIL LETTER**

Dear Participant,

I am a doctoral student in the EAHR at Texas A&M University. Working under the supervision of Professor Dr. Lloyd Korhonen, Director of Distance Learning Research, I am conducting a quantitative research study on distance learning receptivity by a cultural influence in Texas A&M University as the dissertation component of my degree requirements. I am requesting your cooperation as a voluntary participant in this study, which I hope is going to help generate a more in-depth understanding of the cross-cultural field of distance learning.

You have been selected to participate in a study on distance learning from the user's perspective. Distance learning includes all course offerings without an instructor physically present. There is no face-to-face interaction.

Your participation is **VITAL**: It will help us to understand your needs, expectations, and preferences for course delivery. Your participation will provide insight into the most appropriate and effective way to offer course through distance learning.

I greatly appreciate your participation in this study. However, for your participation to be meaningful, it is important that you complete all the questions in the survey. Your responses to the survey are completely **CONFIDENTIAL**, and all analyses of the results will be aggregated across groups of students.

Please visit the below address.

URL: [www.cdlr.tamu.edu/academic\\_support/kim/start.asp](http://www.cdlr.tamu.edu/academic_support/kim/start.asp)

I thank you in advance for completing the survey. Please contact me 695-2681 with any concerns you may have.

Sincerely,  
Jungil Kim

**APPENDIX B**  
**INFORMATION SHEET**

Thank you for visiting this survey site. This research project is designed to identify cultural influence on distance-learning receptivity.

### INFORMATION SHEET

The purpose of this study is to determine if differences in distance-learning receptivity and perceived technology usefulness exists between American and Korean graduate students.

You will be one of approximately 780 participants in this study. The procedure used will be responding to an electronic mail questionnaire. The questionnaire takes approximately **15 minutes** to complete. Participation is voluntary and you may withdraw from the study at any time. You may also refuse to answer any item that you do not want to answer. There is no compensation for participating in this study, and there is no penalty from dropping out of the study.

All data generated during this study will remain **confidential** and will be stored in a secure server at Center for Distance Learning Research, Texas A&M University. Your individual responses will be available only to principal investigator and graduate committee members. Only aggregate data will be reported, without identifying information.

You may contact the principal investigator, Jungil Kim, at (979) 695-2681 or e-mail: [jikim@tamu.edu](mailto:jikim@tamu.edu). You may contact the dissertation committee chair, Dr. Lloyd Korhonen, at (979) 862-7126 or e-mail: [l-korhonen@tamu.edu](mailto:l-korhonen@tamu.edu).

You understand that this research study has been reviewed and approved by the Institutional Review Board-Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Dr. Michael W. Buckley, Director of Research Compliance, Office of Vice President for Research at (979) 458-4067 or e-mail: [mwbuckley@tamu.edu](mailto:mwbuckley@tamu.edu).

**By clicking the button below titled "I understand and agree to participate" you will gain access to the questionnaire for this study.**

**E-mail ID**

**I understand and agree to participate**

**APPENDIX C**  
**SURVEY QUESTIONNAIRE**

## DISTANCE LEARNING SURVEY

### SECTION I: CULTURAL VALUES

This section consists of general questions on your dominant values.

Please respond by circling the one number to the right of each item that corresponds most closely to your agreement or disagreement with the item.

**1=Strongly disagree 2=Disagree to some extent 3=Neutral  
4=Agree to some extent 5=Strongly agree**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. Only those who depend on themselves get ahead in life  | 1 | 2 | 3 | 4 | 5 |
| 2. To be superior a person must stand alone   | 1 | 2 | 3 | 4 | 5 |
| 3. If you want something done right, you've got to do it yourself   |   |   |   |   |   |
|   | 1 | 2 | 3 | 4 | 5 |
| 4. What happens to me is my own doing   | 1 | 2 | 3 | 4 | 5 |
| 5. In the long run the only person you can count on is yourself   | 1 | 2 | 3 | 4 | 5 |
| 6. Winning is everything  | 1 | 2 | 3 | 4 | 5 |
| 7. I feel that winning is important in both work and games  | 1 | 2 | 3 | 4 | 5 |
| 8. Success is the most important thing in life  | 1 | 2 | 3 | 4 | 5 |
| 9. It annoys me when other people perform better than I do  | 1 | 2 | 3 | 4 | 5 |
| 10. Doing your best isn't enough; it is important to win  | 1 | 2 | 3 | 4 | 5 |
| 11. I prefer to work with others in a group rather than working alone   |   |   |   |   |   |
|   | 1 | 2 | 3 | 4 | 5 |
| 12. Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group              | 1 | 2 | 3 | 4 | 5 |
| 13. Working with a group is better than working alone   | 1 | 2 | 3 | 4 | 5 |
| 14. People should be made aware that if they are going to be part of a group then they are sometimes going to have to do things they don't want to do |   |   |   |   |   |
|   | 1 | 2 | 3 | 4 | 5 |
| 15. People who belong to a group should realize that they're not always going to get what they personally want  | 1 | 2 | 3 | 4 | 5 |

16. People in a group should realize that they sometimes are going to have to make sacrifices for the sake of the group as a whole 1 2 3 4 5
17. People in a group should be willing to make sacrifices for the sake of the group's well-being 1 2 3 4 5
18. A group is more productive when its members do what they want to do rather than what the group wants them to do 1 2 3 4 5
19. A group is most efficient when its members do what they think is best rather than doing what the group wants them to do 1 2 3 4 5
20. A group is more productive when its members follow their own interest and concerns 1 2 3 4 5

## SECTION II: DELIVERY PREFERENCE

This section consists of questions relating to three areas - subject type, course type, and media type- of importance for distance learning.

### A. SUBJECT TYPE

A list of subject areas is provided in the following page.

Please circle all the subject areas you will consider taking through distance learning

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Biological Science     | <input type="checkbox"/> Chemistry                        | <input type="checkbox"/> Physical Science       |
| <input type="checkbox"/> English                | <input type="checkbox"/> Architecture                     | <input type="checkbox"/> History                |
| <input type="checkbox"/> Aerospace Engineering  | <input type="checkbox"/> Communications                   | <input type="checkbox"/> Mathematics            |
| <input type="checkbox"/> Agricultural Economics | <input type="checkbox"/> Philosophy and Religious Studies | <input type="checkbox"/> Psychology             |
| <input type="checkbox"/> Public Administration  | <input type="checkbox"/> Geography                        | <input type="checkbox"/> Mechanical Engineering |
| <input type="checkbox"/> Social Science         | <input type="checkbox"/> Women's Studies                  | <input type="checkbox"/> Accounting             |
| <input type="checkbox"/> Finance                | <input type="checkbox"/> Business Economics               | <input type="checkbox"/> Ocean Engineering      |
| <input type="checkbox"/> Civil Engineering      | <input type="checkbox"/> Management                       | <input type="checkbox"/> Statistics             |
| <input type="checkbox"/> Marketing              | <input type="checkbox"/> Computer Science                 | <input type="checkbox"/> Education              |
| <input type="checkbox"/> Economics              | <input type="checkbox"/> Agricultural Education           | <input type="checkbox"/> Oceanography           |
| <input type="checkbox"/> Political Science      | <input type="checkbox"/> Industrial Engineering           | <input type="checkbox"/> Zoology                |
- Other (Please specify)
-

From the above list, rank the top 5 subjects from the most likely to the least likely you would consider taking through distance learning

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_

### B. MEDIA TYPE

This section consists of questions regarding the media type you would consider using for distance learning.

Please circle the appropriate response to the right of the items.

**1 = Not at all 2 =To slight extent 3 =To a moderate extent 4 =To a great extent  
5 =To a very great extent**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. I would consider a distance course that uses the world wide web.         | 1 | 2 | 3 | 4 | 5 |
| 2. I would consider a distance course that uses news groups.                | 1 | 2 | 3 | 4 | 5 |
| 3. I would consider a distance course that uses electronic bulletin boards. | 1 | 2 | 3 | 4 | 5 |
| 4. I would consider a distance course that uses e-mail.                     | 1 | 2 | 3 | 4 | 5 |
| 5. I would consider a distance course that uses video conferencing.         | 1 | 2 | 3 | 4 | 5 |
| 6. I would consider a distance course that uses Internet in general.        | 1 | 2 | 3 | 4 | 5 |
| 7. I would consider a distance course that uses chat rooms.                 | 1 | 2 | 3 | 4 | 5 |
| 8. I would consider a distance course that uses U.S. mail                   | 1 | 2 | 3 | 4 | 5 |
| 9. I would consider a distance course that uses videotape                   | 1 | 2 | 3 | 4 | 5 |
| 10. I would consider a distance course that uses audiotape                  | 1 | 2 | 3 | 4 | 5 |

### C. COURSE TYPE

In this section, we would like to know the type of courses you would consider taking through distance learning.

Please circle the appropriate response to the right of each statement

**1=Strongly disagree 2=Disagree to some extent 3=Neutral  
4=Agree to some extent 5=Strongly agree**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. I would consider distance learning for a core course. | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 2. I would consider distance learning for an elective course.          | 1 | 2 | 3 | 4 | 5 |
| 3. I would consider distance learning for a course in my major.        | 1 | 2 | 3 | 4 | 5 |
| 4. I would consider distance learning for an introductory core course. |   |   |   |   |   |
|  | 1 | 2 | 3 | 4 | 5 |
| 5. I would consider distance learning for an advance course.           | 1 | 2 | 3 | 4 | 5 |
| 6. I would consider distance learning for a seminar course.            | 1 | 2 | 3 | 4 | 5 |
| 7. I would consider distance learning for a laboratory course.         | 1 | 2 | 3 | 4 | 5 |
| 8. I would consider distance learning for an independent study.        |   |   |   |   |   |
|  | 1 | 2 | 3 | 4 | 5 |
| 9. I would consider distance learning for a lecture course.            | 1 | 2 | 3 | 4 | 5 |
| 10. I would consider distance learning for a free elective.            | 1 | 2 | 3 | 4 | 5 |
| 11. I would consider distance learning for a research project.         | 1 | 2 | 3 | 4 | 5 |

### SECTION III: PERCEIVED USEFULNESS

In this section, we would like to find out how useful you feel these media types would be for distance learning.

Please circle one number to the right of each statement that corresponds to your desired response.

**1 = Not useful 2 = Slightly useful 3 = Moderately useful 4 = Useful  
5 = Very useful**

- |                       |   |   |   |   |   |
|-----------------------|---|---|---|---|---|
| 1. Internet           | 1 | 2 | 3 | 4 | 5 |
| 2. World wide web     | 1 | 2 | 3 | 4 | 5 |
| 3. E-mail             | 1 | 2 | 3 | 4 | 5 |
| 4. Video-conferencing | 1 | 2 | 3 | 4 | 5 |
| 5. Chat rooms         | 1 | 2 | 3 | 4 | 5 |
| 6. Audio Tape         | 1 | 2 | 3 | 4 | 5 |
| 7. Videotape          | 1 | 2 | 3 | 4 | 5 |
| 8. U.S. Mail          | 1 | 2 | 3 | 4 | 5 |

## SECTION IV: TECHNOLOGY FAMILIARITY

This section consists of questions relating to how much time you spend on, as well as how often you use the different technologies.

Please circle only one letter that corresponds most closely with your response.

### A. DAILY USAGE:

On an **average working day**, how much time do you spend on the following media type?

**1 = Almost never**

**2 = Less than ½ hour**

**3 = From ½ to 1 hour**

**4 = 1-2 hours**

**5 = 2-3 hours**

**6 = More than 3 hours**

- |                                     |   |   |   |   |   |   |
|-------------------------------------|---|---|---|---|---|---|
| 1. I use the world wide web         | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. I use e-mail                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I transfer files with a computer | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. I use video conferencing         | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I use news and discussion groups | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I use electronic bulletin boards | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I use chat room                  | 1 | 2 | 3 | 4 | 5 | 6 |

### B. FREQUENCY OF USE:

On the average, how frequently do you use each technology?

**1 = Less than once a month** **2 = Once a month** **3 = A few times a months**

**4 = A few times a week** **5 = About once a day** **6 = Several times a day**

- |                                     |   |   |   |   |   |   |
|-------------------------------------|---|---|---|---|---|---|
| 1. I use the world wide web         | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. I use e-mail                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I transfer files with a computer | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. I use video conferencing         | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I use news and discussion groups | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I use electronic bulletin boards | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I use chat rooms                 | 1 | 2 | 3 | 4 | 5 | 6 |

### C. DISTANCE LEARNING EXPERIENCE

1. Have you taken distance learning before?
  - Never taken  1-2 times  3-5 times  More than 5 times
2. What type of distance learning technology have you taken? (Check all that you have taken)
  - Video conferencing  Web CT  First Class  Audio/Video tape
  - E-mail  US mail  Others \_\_\_\_\_

### SECTION V: BACKGROUND INFORMATION

The remaining questions in the survey are concerned with your background and work experience. This information will help identify trends in the data for different groups of students. Please remember that your responses are anonymous and **completely confidential**.

1. Nationality:  U.S. student  Korean student  others
2. If you are a Korean student, how long have you been in U.S.?
  - 0-2 years       2-4 years       4-6 years       More than 6 year
3. Sex:                       Male                       Female
4. Current Age            \_\_\_\_\_            Years
5. Marital status:       Never married       Married       Divorced/Separated
6. How many children do you have?
  - None     One child     Two children     Three children     More than three children
7. Citizenship:  U. S.  Other (please specify country) \_\_\_\_\_
8. Which of the following best describes you?
  - African American     Asian       Caucasian     Hispanic
  - Native American     Other (Please specify) \_\_\_\_\_
9. Student status:             Masters       Doctoral
10. Current student status:     full-time     part-time?
11. What is/was your cumulative grade point average? \_\_\_\_\_
12. Current employment status:  full-time  part-time  not employed
13. What is your department? \_\_\_\_\_

**Thank you very much for completing this survey.**

**APPENDIX D****FACTOR ANALYSIS OF INDIVIDUALISM-COLLECTIVISM ITEMS**

Items	Cultural value Factors				
	1	2	3	4	5
1. Only those who depend on them selves get ahead in life			.791		
2. To be superior a person must stand alone			.674		
3. If you want something done right, you've got to do it yourself			.615		
4. What happens to me is my own doing			.675		
5. In the long run the only person you can count on is yourself			.655		
6. Winning is everything	.678				
7. I feel that winning is important in both work and games	.789				
8. I feel that winning is important in both work and games	.704				
9. It annoys me when other people perform better than I do	.628				
10. Doing your best isn't enough; it is important to win	.808				
11. I prefer to work with others in a group rather than working alone					.829
12. Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group					.756
13. Working with a group is better than working alone					.823
14. People should be made aware that if they are going to be part of a group then they are sometimes going to have to do things they don't want to do		.839			
15. People who belong to a group should realize that they're not always going to get what they personally want		.849			
16. People in a group should realize that they sometimes are going to have to make sacrifices for the sake of the group as a whole		.851			
17. People in a group should be willing to make sacrifices for the sake of the group's well-being		.651			
18. A group is more productive when its members do what they want to do rather than what the group wants them to do				.876	
19. A group is most efficient when its members do what they think is best rather than doing what the group wants them to do				.881	
20. A group is more productive when its members follow their own interest and concerns				.816	

*Note.* Items 11, 13-17 were reverse-coded to preserve consistent directionality, with high values indicating high individualism.

**APPENDIX E**

**FACTOR ANALYSIS OF DISTANCE-LEARNING RECEPTIVITY AND  
PERCEIVED TECHNOLOGY USEFULNESS ITEMS**

Items	Media Factors		Course Factors	
	1	2	1	2
	1. I would consider a distance course that uses the world wide web	.835		
2. I would consider a distance course that uses news groups	.749			
3. I would consider a distance course that uses electronic bulletin boards	.809			
4. I would consider a distance course that uses e-mail	.798			
5. I would consider a distance course that uses video conferencing	.423			
6. I would consider a distance course that uses internet in general	.807			
7. I would consider a distance course that uses chat rooms	.685			
8. I would consider a distance course that uses U.S. mail		.709		
9. I would consider a distance course that uses videotape		.880		
10. I would consider a distance course that uses audiotape		.893		
11. I would consider distance learning for a core course			.830	
12. I would consider distance learning for an elective course				.768
13. I would consider distance learning for a course in my major			.732	
14. I would consider distance learning for an introductory core course			.684	
15. I would consider distance learning for an advance course			.758	
16. I would consider distance learning for a seminar course				.663
17. I would consider distance learning for a laboratory course			.686	
18. I would consider distance learning for an independent study				.737
19. I would consider distance learning for a lecture course				.612
20. I would consider distance learning for a free elective				.816
21. I would consider distance learning for a research project			.597	

Items	Usefulness Factors		
	1	2	3
1. Internet	.949		
2. World Wide Web	.939		
3. E-mail	.659		
4. Video conferencing			.816
5. Chat rooms			.794
6. Audiotape		.869	
7. Videotape		.872	
8. U.S. Mail		.719	

**APPENDIX F****ANALYSIS OF VARIANCE FOR EACH CULTURAL VALUE**

<b>Dependent Variable</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Between Groups	.248	1	.248	.344	.558
	Within Groups	250.829	348	.721		
	Total	251.077	349			
Win Above All	Between Groups	.175	1	.175	.240	.624
	Within Groups	253.213	348	.728		
	Total	253.388	349			
Group Sacrifice	Between Groups	12.387	1	12.387	17.252	.000
	Within Groups	249.860	348	.718		
	Total	262.246	349			
Group Preference	Between Groups	.420	1	.420	1.016	.314
	Within Groups	143.688	348	.413		
	Total	144.107	349			
Individual Thinking	Between Groups	74.853	1	74.853	94.705	.000
	Within Groups	275.054	348	.790		
	Total	349.908	349			

**APPENDIX G**

**TWO-WAY ANOVA FOR THE RECEPTIVITY**

**OF DISTANCE LEARNING AS AN INTERACTIVE MEDIA**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	3.727	1	3.727	5.891	.016
	Tendency	.257	1	.257	.407	.524
	N X T	.810	1	.810	1.280	.259
	Error	218.926	346	.633		
	Total	223.384	349			
Win Above All	Nationality	3.434	1	3.434	5.453	.020
	Tendency	.266	1	.266	.423	.516
	N X T	.762	1	.762	1.210	.272
	Error	217.912	346	.630		
	Total	223.384	349			
Group Sacrifice	Nationality	2.780	1	2.780	4.461	.035
	Tendency	3.722	1	3.722	5.973	.015
	N X T	.071	1	.071	.114	.736
	Error	215.623	346	.623		
	Total	223.384	349			
Group Preference	Nationality	3.591	1	3.591	5.693	.018
	Tendency	.940	1	.940	1.490	.223
	N X T	.053	1	.053	.083	.773
	Error	218.220	346	.631		
	Total	223.384	349			
Individual Thinking	Nationality	2.683	1	2.683	4.247	.040
	Tendency	.676	1	.676	1.069	.302
	N X T	.090	1	.090	.142	.706
	Error	218.621	346	.632		
	Total	223.384	349			

**APPENDIX H**

**TWO-WAY ANOVA FOR THE RECEPTIVITY**

**OF DISTANCE LEARNING AS A NON-INTERACTIVE MEDIA**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	.016	1	.016	.016	.899
	Tendency	.955	1	.955	.961	.328
	N X T	1.587	1	1.587	1.597	.207
	Error	343.980	346	.994		
	Total	345.791	349			
Win Above All	Nationality	.017	1	.017	.017	.896
	Tendency	.101	1	.101	.101	.750
	N X T	.552	1	.552	.553	.458
	Error	345.214	346	.998		
	Total	345.791	349			
Group Sacrifice	Nationality	.001	1	.001	.001	.975
	Tendency	.021	1	.021	.021	.886
	N X T	1.165	1	1.165	1.170	.280
	Error	344.472	346	.996		
	Total	345.791	349			
Group Preference	Nationality	.000	1	.000	.000	.984
	Tendency	.049	1	.049	.049	.825
	N X T	.386	1	.386	.387	.534
	Error	345.050	346	.997		
	Total	345.791	349			
Individual Thinking	Nationality	.063	1	.063	.063	.802
	Tendency	.070	1	.070	.070	.792
	N X T	.281	1	.281	.281	.596
	Error	345.481	346	.999		
	Total	345.791	349			

**APPENDIX I**

**TWO-WAY ANOVA FOR THE RECEPTIVITY**

**OF DISTANCE LEARNING AS A MAJOR COURSE**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	40.451	1	40.451	40.568	.000
	Tendency	.270	1	.270	.271	.603
	N X T	.011	1	.011	.012	.915
	Error	345.001	346	.997		
	Total	385.744	349			
Win Above All	Nationality	39.881	1	39.881	40.238	.000
	Tendency	1.228	1	1.228	1.239	.266
	N X T	2.127	1	2.127	2.146	.144
	Error	342.926	346	.991		
	Total	385.744	349			
Group Sacrifice	Nationality	40.547	1	40.547	40.660	.000
	Tendency	.072	1	.072	.073	.788
	N X T	.072	1	.072	.073	.788
	Error	345.038	346	.997		
	Total	385.744	349			
Group Preference	Nationality	35.964	1	35.964	36.072	.000
	Tendency	.021	1	.021	.021	.885
	N X T	.181	1	.181	.101	.671
	Error	344.966	346	.997		
	Total	385.744	349			
Individual Thinking	Nationality	33.747	1	33.747	34.008	.000
	Tendency	.076	1	.076	.077	.782
	N X T	1.340	1	1.340	1.350	.246
	Error	343.336	346	.992		
	Total	385.744	349			

**APPENDIX J**

**TWO-WAY ANOVA FOR THE RECEPTIVITY**

**OF DISTANCE LEARNING AS A NON-MAJOR COURSE**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	13.846	1	13.846	19.939	.000
	Tendency	.661	1	.661	.952	.330
	N X T	.032	1	.032	.046	.830
	Error	240.270	346	.694		
	Total	254.870	349			
Win Above All	Nationality	13.528	1	13.528	19.548	.000
	Tendency	.371	1	.371	.536	.465
	N X T	.456	1	.456	.658	.418
	Error	239.448	346	.692		
	Total	254.870	349			
Group Sacrifice	Nationality	12.185	1	12.185	17.652	.000
	Tendency	1.168	1	1.168	1.691	.194
	N X T	.174	1	.174	.252	.616
	Error	238.846	346	.690		
	Total	254.870	349			
Group Preference	Nationality	13.540	1	13.540	19.550	.000
	Tendency	.658	1	.658	.950	.330
	N X T	.128	1	.128	.185	.667
	Error	239.635	346	.693		
	Total	254.870	349			
Individual Thinking	Nationality	11.319	1	11.319	16.380	.000
	Tendency	1.336	1	1.336	1.934	.165
	N X T	.055	1	.055	.080	.777
	Error	239.094	346	.691		
	Total	254.870	349			

**APPENDIX K****TWO-WAY ANOVA FOR THE ADVANCE TECHNOLOGY USEFULNESS**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	4.156	1	4.156	9.958	.002
	Tendency	1.077	1	1.077	2.580	.109
	N X T	.009	1	.009	.021	.884
	Error	144.423	346	.417		
	Total	150.146	349			
Win Above All	Nationality	4.205	1	4.205	10.008	.002
	Tendency	.558	1	.558	1.328	.250
	N X T	.098	1	.089	.234	.629
	Error	145.359	346	.420		
	Total	150.146	349			
Group Sacrifice	Nationality	3.593	1	3.593	8.578	.004
	Tendency	.414	1	.414	.990	.321
	N X T	.169	1	.169	.403	.526
	Error	144.917	346	.419		
	Total	150.146	349			
Group Preference	Nationality	2.995	1	2.995	7.149	.008
	Tendency	.625	1	.625	1.492	.223
	N X T	.791	1	.791	1.889	.170
	Error	144.945	346	.419		
	Total	150.146	349			
Individual Thinking	Nationality	2.750	1	2.750	6.703	.010
	Tendency	3.005	1	3.005	7.324	.007
	N X T	.050	1	.050	.122	.727
	Error	141.970	346	.410		
	Total	150.146	349			

**APPENDIX L**  
**TWO-WAY ANOVA FOR THE CONTEMPORARY TECHNOLOGY**  
**USEFULNESS**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	15.302	1	15.302	17.893	.000
	Tendency	.086	1	.086	.100	.752
	N X T	.493	1	.493	.576	.448
	Error	295.892	346	.855		
	Total	311.544	349			
Win Above All	Nationality	15.050	1	15.050	17.615	.000
	Tendency	.655	1	.655	.766	.382
	N X T	.443	1	.443	.518	.472
	Error	295.622	346	.854		
	Total	311.544	349			
Group Sacrifice	Nationality	12.468	1	12.468	14.909	.000
	Tendency	5.532	1	5.532	6.615	.011
	N X T	.007	1	.007	.008	.929
	Error	289.358	346	.836		
	Total	311.544	349			
Group Preference	Nationality	14.236	1	14.236	16.636	.000
	Tendency	.182	1	.182	.212	.645
	N X T	.013	1	.013	.015	.902
	Error	296.080	346	.856		
	Total	311.544	349			
Individual Thinking	Nationality	12.793	1	12.793	14.979	.000
	Tendency	.483	1	.483	.566	.452
	N X T	.100	1	.100	.117	.732
	Error	295.499	346	.854		
	Total	311.544	349			

**APPENDIX M****TWO-WAY ANOVA FOR THE TRADITIONAL TECHNOLOGY USEFULNESS**

<b>Tendency</b>	<b>Source</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Sig.</b>
Stand Alone	Nationality	.011	1	.011	.012	.911
	Tendency	.112	1	.112	.128	.721
	N X T	3.088	1	3.088	3.519	.062
	Error	303.638	346	.878		
	Total	307.019	349			
Win Above All	Nationality	.003	1	.003	.003	.957
	Tendency	.183	1	.183	.206	.650
	N X T	.034	1	.034	.039	.844
	Error	306.834	346	.887		
	Total	307.019	349			
Group Sacrifice	Nationality	.011	1	.011	.013	.911
	Tendency	.234	1	.234	.265	.607
	N X T	.834	1	.834	.943	.332
	Error	306.173	346	.885		
	Total	307.019	349			
Group Preference	Nationality	.080	1	.080	.091	.763
	Tendency	.217	1	.217	.245	.621
	N X T	.742	1	.742	.841	.360
	Error	305.322	346	.882		
	Total	307.019	349			
Individual Thinking	Nationality	.000	1	.000	.000	.988
	Tendency	.876	1	.876	.990	.320
	N X T	.468	1	.468	.529	.467
	Error	306.019	346	.884		
	Total	307.019	349			

**APPENDIX N****REGRESSION ON THE RECEPTIVITY OF DISTANCE LEARNING**

Dependent variable	Predictors	Unstandardized Coefficients	Standard Error	t	Sig.
Interactive media <sup>1</sup>	(constant)	3.634	.109	33.388	.000
	Age	.014	.062	.228	.820
	Gender	.263	.083	3.151	.002
	Experience	.171	.053	3.194	.002
	Nationality	.004	.098	.036	.971
	Marital Status	-.096	.082	-1.174	.241
	Number of children	.090	.102	.884	.377
	Degree level	-.090	.082	-1.089	.277
	Employment Status	-.115	.053	-2.159	.032
Non-interactive media <sup>2</sup>	(constant)	2.514	.161	15.639	.000
	Age	.002	.092	.016	.987
	Gender	.161	.122	1.312	.190
	Experience	.101	.079	1.282	.201
	Nationality	.086	.144	.598	.550
	Marital Status	.075	.120	.620	.536
	Number of children	.043	.151	.283	.777
	Degree level	-.091	.120	-.756	.450
	Employment Status	.109	.078	1.395	.164
Major course <sup>3</sup>	(constant)	2.859	.142	20.180	.000
	Age	.162	.081	1.994	.047
	Gender	.250	.108	2.321	.021
	Experience	.391	.069	5.653	.000
	Nationality	-.338	.127	-2.659	.008
	Marital Status	.023	.106	.215	.830
	Number of children	.261	.133	1.968	.050
	Degree level	-.058	.106	-.552	.581
	Employment Status	-.152	.069	-2.200	.028
Non-major course <sup>4</sup>	(constant)	3.975	.114	34.792	.000
	Age	.183	.064	2.849	.005
	Gender	.096	.086	1.107	.269
	Experience	.198	.055	3.595	.000
	Nationality	-.254	.101	-2.511	.013
	Marital Status	.095	.085	1.117	.265
	Number of children	.066	.105	.623	.533
	Degree level	-.161	.085	-1.903	.058
	Employment Status	-.058	.055	-1.055	.292

1. F = 5.364 (8, 322), Sig. = .000

2. F = .871 (8, 331), Sig. = .541

3. F = 18.566 (8, 331), Sig. = .000

4. F = 12.212 (8, 324), Sig. = .000

**APPENDIX O**  
**REGRESSION ON THE PERCEIVED TECHNOLOGY USEFULNESS**

<b>Dependent variable</b>	<b>Predictors</b>	<b>Unstandardized Coefficients</b>	<b>Standard Error</b>	<b>t</b>	<b>Sig.</b>
Advanced Technology <sup>1</sup>	(constant)	4.685	.079	59.140	.000
	Age	-.014	.045	-.302	.763
	Gender	.103	.060	1.729	.085
	Experience	.062	.038	1.627	.105
	Nationality	-.182	.070	-2.611	.009
	Marital Status	.081	.059	1.364	.173
	Number of children	-.024	.074	-.327	.744
	Degree level	-.090	.059	-1.518	.130
Contemporary Technology <sup>2</sup>	(constant)	3.278	.142	23.096	.000
	Age	-.029	.081	-.360	.719
	Gender	.332	.108	3.061	.002
	Experience	.148	.069	2.132	.034
	Nationality	-.270	.127	-2.115	.035
	Marital Status	-.252	.106	-2.371	.018
	Number of children	.380	.133	2.857	.005
	Degree level	-.124	.106	-1.163	.246
Traditional Technology <sup>3</sup>	(constant)	2.343	.150	15.600	.000
	Age	-.063	.086	-.734	.463
	Gender	.155	.114	1.357	.176
	Experience	.070	.073	.952	.342
	Nationality	.030	.135	.221	.825
	Marital Status	-.133	.113	-1.179	.239
	Number of children	.289	.141	2.051	.014
	Degree level	.032	.112	.283	.777
	Employment Status	.093	.073	1.273	.204

1. F = 4.475 (8, 317), Sig. = .000

2. F = 5.520 (8, 329), Sig. = .000

3. F = .946 (8, 331), Sig. = .479

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**EDUCATION**

- 2004      Doctor of Philosophy, Educational Human Resource Development  
Texas A&M University, College Station, Texas
- 1998      Master of Art, Economics of Education  
Yousei University, Seoul, Korea
- 1993      Bachelor of Science, Oceanography  
Naval Academy, Chinhae, Korea

**EXPERIENCE (Military)**

- 1999-2000    ROKS PKM 339, The Second Fleet of ROK Navy, Korea  
Commanding Officer
- 1996-1997    ROKS PCC 775, The Second Fleet of ROK Navy, Korea  
Weapon System Officer
- 1994-1995    ROKS MSC 552, The 52 Mine Squadron of ROK Navy, Korea  
Executive Officer
- 1993-1994    ROKS DD-922, The First Fleet of ROK Navy, Korea  
Communication Officer

**EXPERIENCE (University)**

- 1997-1998    Yonsei University Faculty Council, Seoul, Korea  
Graduate Assistant

**AWARD**

A letter of commendation from Prime Minister of Korea