Instructional Design Implications for Non-native English Speaking Graduate Students:

Perceptions on Intercultural Communicative Competences and Instructional Design

Strategies for Socially Engaged Learning

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ABSTRACT

A university is an academic place with students from a variety of cultures. Non-native English speaking (NNS) graduate students are a group representing diverse cultural backgrounds. However, these students' challenges in linguistic and socio-cultural adjustment impact their effective learning and academic success. Intercultural Communicative Competence (ICC) is an important ability that they need to consider. It assesses attitude, skills, knowledge, adaptability, flexibility, and communication ability with culturally different people.

Researchers in Instructional Design and Technology (IDT) have suggested that instructional designers should understand diverse learners' abilities and cultural characteristics and apply them in their Instructional Design (ID) strategies. However, the existing ID models do not specifically include ICC as a consideration in the design process. Furthermore, there has been a lack of research on culturally diverse or minority students.

Considering NNS graduate students' characteristics, cultural diversity, and need to develop ICC, the researcher reviewed three social theories of learning: social learning theory, sociocultural and cultural-historical activity theory, and situated learning theory. Socially engaged learning, a synthesized framework, was recommended for NNS graduate students along with effective ID strategies.

This research investigated perceptions on ICC and ID strategies for socially engaged learning in a sample of 208 NNS graduate students. Quantitative methods were used to assess students' ICC level and perceptions of effective instructional strategies in four categories: (1) students' gradual engagement and active participation, (2) learning in rich cultural context, (3) self-regulation and learning ownership, and (4) integration of communication technologies.

Results showed that NNS graduate students were diverse in background characteristics, academic disciplines, cultural origins, and previous experiences; they perceived a moderately high level of ICC; and they generally had positive views on ID strategies for socially engaged learning. This research can help instructional designers and instructors in higher education to better understand the needs of NNS graduate students and to prepare them to study more effectively and have more valuable intercultural experiences.

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I began the doctoral course with a dream: to be an excellent researcher and practitioner who can help others learn through the extended knowledge and skills of instructional design and technology. As I have studied and collaborated with many others in this course, every moment reminded me I was learning through the social interactions with them and getting priceless and countless helps from them. I have always realized that I could not accomplish anything without them. I would like to acknowledge those who have influenced me and contributed to my research substantially, so I deeply appreciate their help, support, encouragement and love.

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Chapter 1: Introduction

Background

A university is an academic place with a variety of students from different cultures. Around one-third of the world's international students choose United States (U.S.) universities to study abroad (Zikopoulos, 1991). The Institute of International Education (IIE) in its open door report (IIE, 2008) indicates that the total number of international students enrolled in U.S. universities is currently 623,805, including 276,842 international graduate students. The increasing number of international students studying in the U.S. confirms that the U.S. is a leading country of international education (Arthur, 2004; IIE, 2008).

International education provides some benefits to non-native English speaking (NNS) international graduate students. Specifically, they can fulfill their personal and educational aspirations (Ku, Lahman, Yeh, & Cheng, 2008). They can experience cross-cultural learning, have professional research opportunities, build their teaching abilities, and achieve expertise in their specific academic field. Despite these benefits, there are many challenges. They must face cultural differences, adjust to the new environment, develop language proficiency, and build new social relationships. These challenges impact the learning efficiency (Huang, 1998), self-esteem (Al-Sharideh & Goe, 1998), anxiety level (S. Zimmerman, 1995), and academic performance of NNS graduate students (Brooks & Adams, 2002; Poyrazli & Kavanaugh, 2006).

Among many difficulties, the core problem is the lack of sufficient communication skills in English because it is associated with other factors already described. While communication skills are important for all graduate students' academic success (Enright & Gitomer, 1989), NNS graduate students tend to struggle with socially and culturally appropriate communication. They lack an understanding of cultural context (Bennett, 1993), fear group discussion (A. Jones,

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Issroff, & Scanlon, 2006), and express uncertainty in communicating with native English speakers (Chiang & Mi, 2008).

Intercultural communicative competence (ICC) is an ability that NNS graduate students need to consider. As Byram (1997) stated, ICC is "the qualities required of the sojourner" (p. 3). It is a set of complex abilities for those who enter a second language and culture to interact successfully with people of different linguistic and cultural backgrounds (Fantini, 2006). The recent definition of ICC, commonly supported by many other approaches to ICC, is "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (Deardorff, 2007, pp. 87-88). Deardorff (2007) notes that ICC begins with attitudes, such as respect, openness, curiosity and discovery; it tends to move from individual level to interaction level, such as internal adaptability and flexibility, and external communication ability in intercultural situations; and the degree of ICC depends on the degree of attitudes, knowledge, and skills. Models explaining the concepts of ICC present its iterative, ecological and gradually developed attributes (Deardorff, 2007; Fantini, 2006; Y. Kim, 1988; Spitzberg, 1994).

Unfortunately, existing instructional design (ID) models do not specifically indicate ICC as an important consideration that instructional designers should analyze and consider in the instructional design process. However, any ID model regards learner analysis as an important process. As an example, the Dick, Carey and Carey model (2005), a widely cited systematic ID model, indicates that instructional designers should systematically analyze the specific target learners or audiences for whom the instruction is designed. Like other characteristics such as gender, age, learning style, and previous experience, ICC can be an important learner factor to analyze. In this regard, Branch (1997) already stated that some ID models, including the

Analysis-Design-Development-Implementation-Evaluation (ADDIE) model, the Dick, Carey & Carey model, and Gagne's nine events, offer the opportunity to consider "culture" or "cultural pluralism" during the process of instructional design. Another systematic ID model, by Smith and Ragan (1993), provides four categories of learner characteristics: stable similarities, stable differences, changing similarities, and changing differences. In regard to learners' changing and different characteristics, these authors indicate their values, beliefs, motivations, and interests, which are devolved from psychosocial and moral stages of development, should be included in the learner analysis process. Smith and Ragan (1993) state:

> If the designer is creating instruction for a national or international population, it is clear that these affective characteristics may vary greatly based on cultural mores. In order to make learning relevant and meaningful, it is important for the designer to obtain information on these values, beliefs and interests (p. 53).

In reviewing ID models that emphasize systematic analysis of learners, it has been well documented that instructional designers should understand diverse learners' abilities and cultural characteristics and apply them in their instructional design strategies. In taking a systematic approach to analyzing target audiences and connecting the analysis with design strategies, this study addresses a need to investigate NNS graduate students' intercultural communicative competence and effective instructional design strategies and technologies which can guide them to be more socially engaged in learning and research in U.S. universities.

Socially engaged learning is an extended concept of engaged learning which establishes the students, more positively, as active learners. This engagement requires a high level of learner participation, responsibility for learning, learning with authentic tasks or problems, and collaboration with other students in shared and flexible roles (Brill & Park, 2008; Bulger, Mayer,

& Almeroth, 2006; Hung, Tan, & Koh, 2006). Such a learning environment is especially recommended for NNS graduate students because previous research findings report that they present a lower level of engagement and participation in social discourse and they tend to be passive in class discussion due to their linguistic limitations and cultural differences (Hlas, Schuh, & Alessi, 2008; Yildiz & Bichelmeyer, 2003). As theoretical background of socially engaged learning, this study reviewed three social theories of learning including (1) social learning theory (Bandura, 1977), explaining an individual's social and psychological functioning; (2) sociocultural theory (Vygotsky, 1978) and activity theory (Engeström, 1987; Leont'ev, 1978), explaining social and cultural impacts on learning; and (3) situated learning theory (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991), emphasizing the effect of gradual involvement in the specific community of practice. In synthesizing the critical concepts from the social theories of learning, socially engaged learning indicates a learning environment in which learners are gradually involved in the rich cultural context, learners' self-regulative ability is encouraged for active participation, and communication tools are effectively and appropriately integrated in the intercultural learning situation. This study investigated how NNS graduate students perceive the effectiveness of the approaches and instructional strategies derived from these social learning theories.

Several instructional design and technology (IDT) scholars (G. Powell, 1997; Subramony, 2004) point out the lack of research on culturally diverse or minority students like NNS graduate students. Previous research on NNS graduate students calls attention to their linguistic and cultural challenges (Baek & Damarin, 2008; Ku, et al., 2008). Few instructional design guidelines exist and no research is available to guide instructional designers or instructors in

preparing their NNS graduate students to study more effectively and have more valuable intercultural experiences while attending a U.S. university.

Purpose of Study and Research Questions

The purpose of this research is to describe NNS graduate students' characteristics and to suggest effective instructional design strategies for them to become more socially engaged and successful in their studies in U.S. graduate programs. For this purpose, this study focuses on investigating those students' perceptions on intercultural communicative competence (ICC) and effective instructional strategies for socially engaged learning. The research questions are the following:

1. What are the perceptions of NNS graduate students in regard to their intercultural communicative competence?

2. What are the perceptions of NNS graduate students in regard to the instructional strategies for their socially engaged learning?

These two questions are intended to embody important instructional design strategies for NNS graduate students into the previously existing instructional design models.

This study utilizes a descriptive and a quantitative method. In using a web-based survey instrument, the study will produce a description of the characteristics of NNS graduate students studying in the U.S. The description will include their perceptions of intercultural communicative competence and instructional design strategies for their socially engaged learning with quantitative data across other learner characteristics such as gender, age, degree, nationality, native language, academic discipline, amount of work experience, number of years in the U.S., pre-arrival language preparation, and prior intercultural experiences.

Findings from this research can provide direct and practical help to two groups of people. First, the outcomes of this study can help instructional designers and instructors in higher education to improve instructional design for socially engaged learning due to a better understanding of the perceptions and instructional needs of NNS graduate students. Second, the results of this study can help current and potential NNS graduate students to recognize and overcome their linguistic and cultural challenges, improve their level of ICC, and achieve their educational goals.

This research can contribute to three intellectual areas: instructional design and technology, second language education, and intercultural education. First, this study can provide a model to the instructional design and technology field for using ICC as a lens to better understand NNS graduate students, their unique characteristics, needs, and desires in relation to international study. Based on this study, further research can expand the use of ICC by IDT professionals in other similar situations including the culturally diverse workplace. Second, this research can inform second language educators about effective design strategies in language instruction for NNS students who enroll in graduate-level programs. Lastly, this study can contribute to developing and evaluating intercultural education programs and services for NNS graduate students in higher education.

Organization of Document

This document consists of five chapters. Chapter 1 provides the background of research, purpose of the study, research questions, and significance of the study. Chapter 2 includes the literature review with three sub-sections: NNS graduate students, intercultural communicative competence for NNS graduate students' academic success, and instructional design strategies for

NNS graduate students' socially engaged learning. Chapter 3 discusses the methodology of this research including the general design of the study, research setting and target participants, instrumentation, research quality, data collection and analysis, and research limitations. Chapter 4 reports the results of the collected and analyzed data including the background characteristics of research participants, their perceived intercultural communicative competences, and the perceived effectiveness of instructional strategies for socially engaged learning. The final chapter includes a discussion of major findings from the research, instructional design implications for NNS graduate students, contributions of the study, and recommendations for future research.

Chapter 2: Literature Review

Introduction

The purpose of this study was to discover instructional design implications for NNS graduate students in the U.S. This chapter provides a review of literature in three relevant areas: (a) non-native English speaking graduate students; (b) intercultural communication as a critical competence for their academic success; and (c) effective instructional design strategies for their socially engaged learning.

Non-native English Speaking International Graduate Students

The goal of this section is to understand the characteristics of non-native English speaking (NNS) international graduate students as the target subjects of the proposed study. This study explores three academic areas: second language education, higher education, and international education. A review of the literature compiled from these areas describes: (1) definitions and characteristics of NNS graduate students, (2) the students' adjustment process, and (3) dimensions of adjustment.

Definitions and Characteristics

NNS graduate students are referred to by a number of terms, which implies multiple characteristics. The common characteristics can be distilled into three points: (1) the students are non-native English speakers including English as Second Language (ESL) learners or English as Foreign Language (EFL) learners; (2) they are international students studying abroad, in contrast with local or domestic students who were born and grew up in the host country; and (3) they have clear purposes and goals as graduate students enrolled in masters, doctoral or other

professional programs. These three points will be described in greater detail below in order to make the subjects of this research clear and specific.

First, non-native English speakers constitute a distinct group from the native English speakers who "learned English as their first language, regardless of ethnicity" (Yildiz & Bichelmeyer, 2003, p. 180). Those non-native English speakers are referred to as ESL or EFL learners. Although the terms ESL and EFL are generally used interchangeably and often regarded as synonyms, second language learning scholars argue that a differentiation should be made for pedagogical purposes (Nayar, 1997).

Efforts to distinguish between these two labels are long-standing, and although some practitioners become confused about terms, the currently recognized distinction seems to depend on the environment in which the actual English language learning occurs. According to Shrum and Glisan (2005), while "ESL educators teach in countries where English is the dominant language such as Australia, Canada, England, and the United States … EFL educators teach in countries where English is spoken only as a foreign language, such as Japan and Saudi Arabia" (p. 3). In applying this distinction, ESL students are those who learn English in the context (or country) where English is the dominant language and EFL students are those who learn English in the context (or country) where English is a secondary or foreign language. Such a distinction is sometimes made for the convenience of research. For example, in the research regarding forum participation of international graduate students, Yildiz and Bichelmeyer (2003) describe the difference thus:

> [ESL learners as students] who learned English in an English-speaking country when
> they were still children and lived in the U.S. for most of their lives…[and EFL learners]

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as students who learned English in a country where English is not the native language and who lived in the U.S. less than 5 years (p. 180).

According to Zimmerman (1995), the number of years that students live in U.S. is unimportant and an inaccurate measure to distinguish between ESL and EFL students. However, terminological distinctions discussed above indicate that the subjects of this study are mainly EFL learners.

Second, the target subjects are foreign or international students who are often contrasted with domestic students. They are also categorized as nonresident aliens. The distinction depends on their social or visa status while living in the host country. An international student holding a Foreign student F1 Visa is technically defined as one "who [is] enrolled in courses at institutions of higher education in the United States who is not a citizen or an immigrant" (Zikopoulos, 1991, p. iv). As this definition indicates, he or she stays in the host country for only a short time (Lacina, 2002) and is in a transitional stage for educational purposes (Mori, 2000). Although the term "study abroad students" refers to those who are in many different programs such as degree programs, exchange programs or language intensive programs (Lee, 2005), the focus of this research is limited to degree programs.

Lastly, the students targeted in this study have clear purposes and goals as graduate students who are enrolled in masters, doctoral or professional programs. As Schinke, da Costa, and Andrews (2001) note, the purpose of graduate programs is "to prepare students to become scholars, leaders, and professionals who will be responsible for the advancement of knowledge and the continued functioning of society" (p. 342). Thus, regardless of whether they are international or domestic students, they take responsibility for and are committed to their own academic and professional performance.

In summary, the NNS graduate student embodies multiple identities and unique characteristics as an English learner, an international student, a foreigner or sojourner, a study abroad student, a graduate student, and a future professional. The critical point that makes NNS graduate students distinct is that they must go through a multi-dimensional and transitional adjustment process in the new environment which is different from the milieu into which they were born and matured. The following two sections describe their adjustment process over time (longitudinal investigation) and adjustment dimensions (multivariate investigation).

Adjustment Process: Longitudinal Investigation

Research on people who enter into a new environment sheds light on their cultural shock and enculturation processes. As an early work, Oberg (1960) proposes four stages in regard to the process of adjustment: honeymoon, regression, adjustment, and recovery. Sojourners tend to be fascinated by the new environment in the first stage, but a few weeks later they confront the real conditions with which they have trouble, such as unfamiliar food, housing, transportation, and shopping customs. In this stage, they realize that people in the host country do not recognize all their troubles and they may have feelings of helplessness, anger, and hostility, and even develop an aggressive attitude toward the host country (Oberg, 1960). After the second stage, they try to overcome their difficulties and admit that such difficulties are something that they have to manage. If they successfully overcome their aggression and frustration, usually through a great deal of trial and error, they finally become effectively well-adjusted and reach the final stage where they can understand pertinent social cues.

The stages described are referred to as a U-curve (see Figure 1) because they reflect the peaks and valleys of mental difficulties during adjustment (Adler, 1975). Many researchers have applied this theory in the case of international students who inevitably experience the adjustment

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process in their new academic life. Since many international students finally go back to their home countries, researchers point out that they may experience another U-curve of readjustment to their native culture; consequently, their adjustment line resembles a W-curve (Cigularova, 2005).
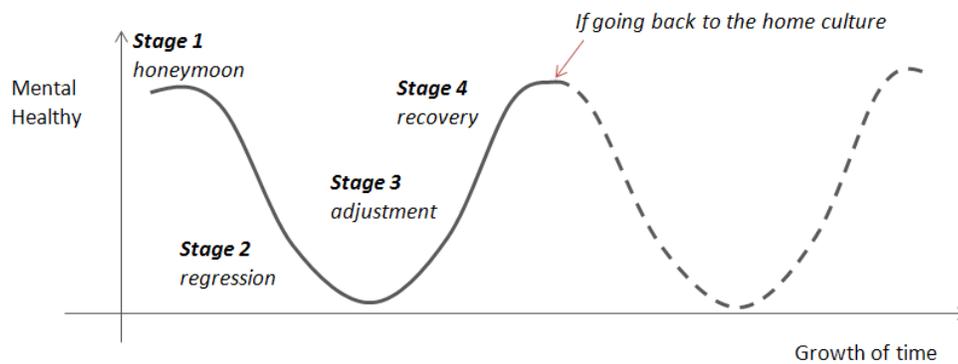
Figure 1. U-curve and W-curve: a social adjustment process of NNS graduate students

Similar to the general U and W-curve models, Adler (1975) explains five transitional phases: contact, disintegration, reintegration, autonomy, and independence. This model mainly focuses on the students' psychological and sociocultural adjustment processes and changes in identity and personality. According to Adler (1975), transitional experience is "a movement from a state of low self- and cultural awareness to a state of high self- and cultural awareness" (p. 15).

In applying Alder's five phases, NNS graduate students begin to perceive the similarities and differences between the home culture and the host culture. They keep their identity, role and personality when they find similar cultural elements. As they go into the disintegration phase, they noticeably recognize the cultural differences and feel emotional difficulties "being different, isolated, and inadequate to new situational demands" (Adler, 1975, p. 16). In the reintegration phase, they strongly reject the new culture, seek relationships with people who have the same cultural background, find ways to resolve their stressful situation, and finally acquire the ability to control their negative feelings. After this phase, students become more sensitive to the second

culture, comfortable with their status, capable of understanding others, able to use appropriate language, and eventually able to function in their roles "as insider - outsider in two different cultures" (Adler, 1975, p. 17). Through this phase students achieve a growth of personal flexibility. In the final phase, students reach the capacity to live independently in the second culture and even enjoy the new life. It is noticeable that they become "humorous, creative, and … capable of putting meaning into situations" (Adler, 1975, p. 18)

Adler (1975) pointed out that the individuals who have deep cross-cultural experiences and go through significant transitional processes must undergo "learning, self-development, and personal growth" (p. 20). That is, such transitional experiences inevitably bring individuals much frustration and many challenges; however, when they overcome the frustration successfully, they can experience significant personal growth with a multi-cultural identity.

Dimensions of Adjustment: Multivariate Investigation

Scholars have used various terms in addressing the concept of adjustment to a non-native culture including enculturation, acculturation, adaptation, assimilation, integration, cross-cultural adjustment, and the development of intercultural competence. Definitions of intercultural competence by scholars and practitioners commonly indicate an individual's willingness and capacity to: (1) learn the host language and culture; (2) modify one's own cultural ways, adopt new ways, and therefore transform one's worldview; and (3) manage the dynamics from cultural differences and stressors (Fantini, 2006; Y. Kim, 1988). Classifications include a general model indicating living, academic, sociocultural, and psychological adjustment (Cigularova, 2005; Stoynoff, 1997; Tseng & Newton, 2002); dimension-based classification indicating cognitive, affective, social, and behavioral aspects (Y. Kim, 1988; S. Zimmerman, 1995); outstanding issue-based classification indicating language proficiency, cultural distance, social support, and

personality (Huang, 1998; Ren, Bryan, Min, & Wei, 2007; Trice, 2003); and psychology focused

classification indicating identity, self-esteem, anxiety, and satisfaction (Al-Sharideh & Goe,

1998).

This section will describe intercultural competence in terms of five dimensions: (1)

social, (2) cultural, (3) cognitive, (4) psychological, and (5) personal.

Social dimension. This dimension is related to students' sociability including social ties

with members in the host culture and social ties with co-cultural members. Professionals in

student affairs of universities or counselors for international students are typically concerned

with students' sociability issues in relation to their satisfaction and retention (Al-Sharideh &

Goe, 1998; Cigularova, 2005; Lacina, 2002). The following summarizes findings from some

empirical studies.

First, frequent interactions with people in the host country have a positive impact on

international students' satisfaction with communication. A research study conducted by

Zimmerman (1995) indicates that interaction of international students with American students is

related to both students' satisfaction with communication and adjustment. This research indicates

that social ties with American native speakers help international students not only to improve

communication skills but also to increase their satisfaction with the communication.

Consequently, such positive outcomes help students' overall adjustment.

Second, social relations impact students' academic satisfaction. Perrucci and Hu's (1995)

research supports the conclusion that academic satisfaction is strongly related to contact with

American students, language skill, and perceived discrimination. In this research, academic

satisfaction is conceptualized by satisfaction with the academic program and the academic

appointment. The former includes relations with a major professor and American graduate

students, the quality of instruction in courses, counseling or advising from faculty, and the international student services office. The latter includes a teaching and research appointment, financial assistance, and relations with undergraduates.

Third, international students need interaction with co-cultural members who have the same cultural origins but require a balance between native and host cultures. Al-Sharideh and Goe (1998) investigate the level of adjustment between two groups: 1) students who have strong ties with co-cultural associates and 2) students with three or fewer social relations from their home countries. This study reveals that strong ties with people of the same cultural background play an important role for international students to maintain high self-esteem and adjust within an American university. However, authors warn that international students who rely heavily on their co-cultural associations may face "the dilemma of balancing life within two different social contexts" (Al-Sharideh & Goe, 1998, p. 720) and a negative influence on their self-esteem; thus, they need to socialize with both co-culturals and Americans.

Cognitive dimension. This dimension is related to students' cognitive load due to the lack of host language proficiency. Human beings have limited working memory. Thus, although NNS students have studied the host language for a long time, they still have cognitive challenges when they use the target language in actual communication situations. Such difficulties impact students' academic performance. The following sections introduce three issues: impact of host language proficiency, role of students' pre-arrival language preparation, and technological support to decrease cognitive load.

First, students' host language proficiency directly impacts their academic performance. Brooks and Adams (2002) investigated the relationship between students' familiarity with spoken English and their academic achievement through a class examination and survey using a

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self-reported instrument to measure their English proficiency. Research results indicate that international students speak English significantly less frequently than local students. For this reason, academic achievement of international students is not as high as local students. This research provides an implication that international students' academic success is directly related to their language proficiency but indirectly related to other variables such as social, cultural, and psychological characteristics.

Additionally, students' host language proficiency significantly impacts their learning efficiency. Huang (1998) observed 18 Chinese and 14 American graduate students and indicated that (1) anxiety level and anxiety duration of Chinese students studying in a U.S. university were significantly higher than in their home country; (2) the anxiety level of international students was significantly higher than that of native students; and (3) the group differences between native and non-native speakers were in "connecting words" and "guessing". The author suggested that "while listening to the instructor, many international students mentally [connect] words with words to make meaning, or [guess], whereas no American students [do] this" (p. 6). The author reasoned that the learning difficulties of international students are caused by the "non-automatization of the language (p. 8)" which impedes their ability to follow the lesson well.

A second issue, students' pre-arrival language preparation, suggests that focusing on practice with native speakers might be more helpful for their social and academic adjustment. In a study conducted by Ren, Bryan, Min and Wei (2007), the participants in the study reported that "making an intelligible speech or presentation were primary stressful experiences in the first year of graduate study" (p. 17). Reasons that they feel difficulties in terms of their language problem include having little practice in listening and speaking in large groups, difficulties with understanding non-native speakers, and difficulties with fast speech and varied accents.

Although most participants have studied English early in their lives and completed several tests to verify their English skills, the way English is taught in their countries does not contribute much to their oral proficiency. This research necessitates pre-arrival English language preparation that is more practically useful for their academic performance from their first year of study on.

Third, since students' non-automatization of language interferes with their learning efficiency, instructional design and the appropriate use of technology can help decrease their cognitive load. Huang (1998) explains that NNS students often need more time to encode all of the external information, retrieve their previous knowledge to make sense of it, and prepare to address thoughts and ideas. A study conducted by Hlas, Schuh, and Alessi (2008) provides an insight about the consideration of such non-automatization of language. They observed diverse international graduate students in a web-based course and in a traditional face-to-face course. Their results indicated that while the NNS students were in the face-to-face course they did not take as many turns as the native speakers in the conversation. However, while they were in the online course NNS students contributed as equally as NS students. This research suggests that an asynchronous function in online technology offers students time to have private reflection. It is an example of how instructional design considerations along with the appropriate technological support can be useful for NNS students' learning.

Cultural dimension. This dimension is related to students' perceptions about cultural differences between their home cultures and host cultures. Generally, the greater the difference between two cultures, the more difficult the international adjustment will be (Mendenhall & Wiley, 1994). Culture related variables include students' different ethnicities, originating regions, cultural beliefs, religions, and use of technology. The following sections introduce three

culture related points: previous educational system, cultural orientation, and cultural symbols in information and communication technologies.

First, students' cultural values formed in their previous educational system impact on communication style and pattern in the classroom setting. In a qualitative study conducted by Ren, Bryan, Min, and Wei (2007) with 12 East Asian international graduate students, participants commented that their previous learning experiences in their home countries were teacher-centered and lecture-centered in nature, which left them unfamiliar with speaking freely during class in a U.S. classroom setting. In another qualitative study, Liu (2001) observed the classroom communication of 20 Asian international graduate students, and categorized it into four kinds of communication patterns: total integration, conditional participation, marginal interaction, and silent observation. The author reports that such different patterns depend on students' perception of the value of their participation in the classroom.

Second, students' cultural orientations and levels of communication context can significantly impact their abilities to collaborate. Cultural orientation can be interpreted along a continuum from individualism where individual identity is more important than group, to collectivism where group identity is more important than individual (Ting-Toomey, 1989). The levels of communication context can also be conceived of along a continuum from high context (e.g., indirect, spiral, and implicit pattern) to low context (e.g., direct, linear, and explicit communication pattern) (E. Hall, 1976). Different cultural orientations and levels of communication context have been compared among various cultures. As an example, Kim, Pan, and Park (1998) surveyed the levels of communication context among Korean, Chinese, and American people. The authors indicated that Chinese and Korean people appeared to be more socially oriented, were more likely to avoid confrontation, and had more trouble dealing with

new situations than Americans. However, cultural differences have not been empirically studied in regard to students' learning and collaborative skills, thus requiring further research.

Third, students' different perceptions of cultural symbols in information communication technologies (ICTs) impact their understanding of meaning. Young (2008b) highlights that design elements in ICTs can be interpreted differently among people whose cultural backgrounds vary. As an example, she states that graphic symbols can be generic such as an arrow mark "go left or go right" or specialized such as a frog mark which is a Native American symbol for water. Thus, Young (2008a) suggests that such "cultural remnants," including: racial, ethnic, cultural, linguistic, political, social, historical, educational, and economic artifacts, should be translated into a generalized form for the broader audience.

Psychological dimension. The psychological dimension is related to students' self-esteem and anxiety levels. Such indicators have been utilized for the prediction of their social adjustment and linguistic burden (Al-Sharideh & Goe, 1998; Huang, 1998; S. Zimmerman, 1995).

First, as international graduate students adjust, they demonstrate higher self-esteem. Self-esteem is defined by "an individual's attitude toward the self as a totality" (as cited in Al-Sharideh & Goe, 1998, p. 701; Rosenberg, 1979). Al-Sharideh and Goe (1998) highlight how students' self-esteem influences their academic performance and persistence, which is more distinctive in international student cases.

Second, NNS international students' satisfaction with their communication impacts the level of anxiety generated when they communicate with native speakers in English. In Huang's (1998) study of Chinese international graduate students and American graduate students, the anxiety level and anxiety duration was measured in order to compare students' various feelings

and attitudes in regard to their first-year graduate classroom activities. The findings indicated that Chinese students' lack of academic background and language proficiency significantly impact the length and severity of anxiety. In Zimmerman's (1995) study, international students' affective dimension of adjustment was measured by their comfort or anxiety generated when they communicated with other English speakers in various campus contexts such as communication with university staff, small group interactions in their classes, and class discussions. The findings indicated that when international students are satisfied with their communication skills, they can more enjoy working in small groups, feel more comfortable participating in class discussion, and perceive the university as a friendly educational environment.

Personal dimension. This dimension is related to students' personality and other demographic factors such as gender, marital status, age, and level of degree program (doctoral or masters), major, and GPA. These items have been considered as factors impacting students' social adjustment and academic success.

First, students' personal characteristics can affect their adjustment. Examples of personality include "flexibility, humor, patience, openness, interest, curiosity, empathy, tolerance for ambiguity, and suspending judgment" (Fantini, 2005, p. 2). Cigularova (2005) explained that although personal assertiveness is highly valued in U.S. society and classrooms, international students from certain countries are significantly less assertive than U.S. students. However, personality-related research in regard to NNS students' adjustment and academic performance has not been empirically verified. Zimmerman (1995) indicated that NNS students' flexibility is related to their satisfaction with communication but not significantly related to their overall adjustment.

Second, marital status, specific ethnicity, and level of degree program can impact students' adjustment strain with their language proficiency. In surveying 149 international graduate students attending five U.S. universities, Poyrazli and Kavanaugh (2006) found that married students have lower levels of social adjustment strain; Asian students and students who are at a lower level of English proficiency have more adjustment strain; and masters students have more adjustment strain due to lack of English communication skill and academic background.

Third, the nature of the academic discipline requires different levels of intercultural competence and language proficiency. Trice (2003) investigated faculty perceptions about international graduate students across four departments: architecture, public health, mechanical engineering, and materials science and engineering. The author pointed out some international graduate student challenges commonly observed by faculty members, including functioning in English, achieving unique academic goals, adjusting culturally, and integrating with American students. The degree of such challenges varies by the nature of the discipline such as hard or soft, pure or applied, and life vs. nonlife disciplines (Biglan, 1973, as cited in Trice, 2003). The finding of Trice's (2003) study indicated that professors in some departments such as mechanical engineering observed very few differences between international and domestic students while professors in other departments such as architecture observed that international students have unique academic and personal issues. In addition, faculty members in the public health area addressed the problem of segregation of domestic and international students, caused partially by their language differences. The author pointed out that no faculty member in other departments marked this issue. She explained that the small population of international students in a department like the public health area (18%) may impact such segregation issues.

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Summary

In this section, unique characteristics of NNS graduate students, their adjustment processes, and multiple adjustment dimensions have been articulated. The fact that they are non-native English speakers, international students, and graduate students creates multilayered challenges. The challenges and adjustment processes occurring as they live in the U.S. and study in their graduate program have been described along longitudinal and multivariate perspectives. The issues are complex and interrelated. However, an important factor in satisfaction and academic success appears to be communication in the host culture. Thus, communicative competence will be discussed in detail in the next section. Furthermore, NNS student characteristics, participants, adjustment process, and adjustment dimensions described in this section can be used to: (1) identify research participants; (2) develop the questions to ask of research participants; and (3) sensitize the researchers to important participant experiences and perspectives.

Intercultural Communicative Competence for NNS Graduate Students' Academic Success

Appropriate communication skills are important for successful academic achievement at the graduate level. In order to be a successful graduate student, one must be able to communicate "one's ideas, knowledge, and insights with others… one must be able to reason from different viewpoints, follow appropriate communicative protocols, and tailor the communication to the audience" (Enright & Gitomer, 1989, p. 17). As this description indicates, communication is not a simple set of knowledge and skills about language or communication *per se*. Rather it requires the pragmatic ability to apply language so that one can readily use the competence in one's academic context.

Communicative competence is a critical factor for the social adjustment, academic achievement, and successful intercultural experience of NNS graduate students. This section aims to define the competences that NNS graduate students need the most so as to create an effective intercultural learning environment. Literature from two areas, language learning and intercultural communication, is used to describe the definition and origin of communicative competence, and more narrowly, intercultural communicative competence.

Language Learning

Points of interest. Focal points of language learning and teaching are "how do people learn language" and "what does it mean to know a language" (Shrum & Glisan, 2005, p. 11). A number of linguists, sociolinguists, and language teachers have explained various notions about human language acquisition and communication. Among them, two perspectives are remarkable. One is that human beings inherently and biologically have linguistic capacity (Chomsky, 1965). Because humans are born with a "language acquisition device (LAD), … [they have] intuitive knowledge of rules of grammar and syntax and of how the linguistic system of a language operates" (Shrum & Glisan, 2005, pp. 12-13). Another perspective is that human beings acquire the linguistic capacity through social and cultural activities (Vygotsky, 1978, 1986). Thus, language requires one to not only learn words and grammar but also to comprehend the social context in which such words are used (Hymes, 1972).

Competence and performance. The two perspectives described above are interdependent in explaining human language ability. An implication from both perspectives is that "regardless of …their first or second language… language works as a system" (Shrum & Glisan, 2005, p. 13) where a human's intrinsic linguistic capacity and social practices in real contexts are interacting with each other. While the former is an innate quality, the latter is an acquired and

developed one in life. These two perspectives help to understand the difference between competence and performance. While competence is the underlying knowledge and skill set that an ideal speaker and listener might possess, performance is the actual behavior that he or she demonstrates in a variety of settings expanding beyond linguistic competence (Chomsky, 1965).

Chomsky's linguistic view. The original term "competence" in language was first mentioned by Chomsky (1965). Wardhaugh (2006) pointed out that Chomsky was "the most influential figure in late twentieth-century linguistics" (p. 2) and he is famous for the deep analysis of linguistic structure and grammar including syntax (i.e., language structure in its finite and restricted formats), and semantics (i.e., meaning of the language in its infinite and creative parts in different contexts and situations). His transformational generative theory explains that since a language consists of what is important (language universals) and what is unimportant (language variations), if one knows the grammar of the language (important part), one can understand the language and create an infinite set of sentences (Wardhaugh, 2006). This perspective leads language teachers and students to focus on the grammar and the structure of language. Sociolinguists and anthropological linguists argue that Chomsky's view of language is asocial; such a theory overlooks the social aspects of language and culture, so it is scarcely worthwhile in the real world (Wardhaugh, 2006).

Hymes' sociolinguistic view. Dell Hymes (1972) was one scholar who addressed the importance of the social aspects of language. He argued that Chomsky's view deals with the internal side of language, so linguistic theory should add the dimension of sociocultural perspectives. Hymes (1972) stated that:

> A normal child acquires knowledge of sentences not only as grammatical but also as appropriate. He or she acquires competence as to when to speak, when not, and as to

what to talk about with whom, when, where, in what manner. In short, a child becomes

able to accomplish a repertoire of speech acts, to take part in speech events, and to

evaluate their accomplishment by others. (pp. 278-279).

In adopting Hymes' view, "the communicative competence implies not only knowing the

grammar, phonology, and lexicon of a language, but also knowing how to use language

effectively and appropriately, furthermore, participating in cross-cultural communication"

(Trudgill, 2003, p. 24).

   Linguistic competence vs. communicative competence. Communicative competence is

distinguished from the perspective of linguistics in which internal and innate analyses of

language structure are the most important. Paulston (1974) expressed two such distinctive areas

as the "referential meaning of language" and the "social meaning of language" (p. 348).

Bialystok (1981) listed dichotomies between the formal and functional use of language: written

and oral forms of language, formal and informal learning environment, language learning and

language acquisition, standard and non-standard dialects, and linguistic and communicative

competence. Given the pairs above, Bialystok (1981) stated that "the first term of each pair

relates to formal language skill such as literacy and metalinguistic awareness and the second to

the communicative skills such as pragmatic or functional ability" (p. 62). Linguistic competence

is often interchangeably called grammatical competence and is characterized as asocial, tacit,

restricted, formal, innate, and standard. On the other hand, communicative competence,

expressed as "spontaneous expression" (Rivers, 1973, p. 26) or "social rules of language use"

(Paulston, 1974, p. 347), is featured as a dynamic, context specific, and relative concept

dependent on the participants in the communication system and manifested through written and

spoken language and other non-verbal sign systems (Savignon, 1983). Communicative

competence has been extended to the concepts of sociolinguistic competence and intercultural competence.

Communicative competence model. The concept of communicative competence described previously has significantly expanded over time for more than four decades. Essentially, communicative competence is one's capacity to use language effectively and appropriately. Such ability is "intimately linked to one's knowledge of social conditions as the setting, the participants, and the goals or purposes for which the language is being used". (Hymes 1964; 1972, as cited in J. Hall, 1999). Since this concept of communicative competence has settled down among not only sociolinguists but also language teachers, there has been a great deal of effort to build a representative model. Through many attempts (Bachman & Palmer, 1982; Canale & Swan, 1980; Celce-Murcia, Dornyei, & Thurrell, 1995), the model has been revised and elaborated.

Currently, the communicative competence model by Celce-Muricia and colleagues (1995) is recognized as the most comprehensive one (J. Hall, 1999; Shrum & Glisan, 2005). This model includes five essential and interrelated components of communicative competence: discourse, sociocultural, linguistic, actional, and strategic competence. In borrowing the explanation of Hall (1999) and Shrum and Glisan (2005), when students' linguistic competence and sociocultural competence are connected with their actional competence, they can arrange their language elements into utterances through their discourse competence and can use strategic competence to communicate smoothly or compensate for deficiencies.

An implication from the model is that all competences within this model are interrelated and important. Thus, if one is lacking the sociocultural information in a certain situation, even though one knows all the grammar of the language, one may not be able to participate

successfully in the discourse of communication. Or, without using correct grammar in the target language, one may fail to convey the intention. In other words, as this model suggests, the NNS student must develop these five kinds of competences with an appropriate level of balance in order to be a successful communicator.

Communicative competence of NNS students. Traditional learning methods of NNS graduate students have failed to help them to develop sufficient communicative competence. For example, Bennett (1993) described NNS students who spoke English well but lacked the proper cultural context to deal with complicated social situations. He called them "fluent fools" (p. 16). Kim (2006) pointed out that international graduate students fear group discussions including "participating in whole-class discussions, raising questions during class, and engaging in small-group discussion (p. 479)" because they lack sociocultural and strategic communicative competence. Chiang and Mi (2008) reported that international teaching assistants (TAs) have problems communicating with American college students and attribute their uncertainty in communicating to their lack of communicative competence.

To facilitate the success of NNS students, communicative competence should be addressed in their academic preparation and performance. NNS students should be prepared to understand contexts and cultural backgrounds (Bennett, 1993), use academic oral discussion skills (S. Kim, 2006); and adopt appropriate reformulation strategies (Chiang & Mi, 2008). For the NNS student, these suggestions highlight the importance of socially and culturally appropriate communication, which is termed intercultural communication.

Intercultural Communication

Points of interest. When people who come from different cultural backgrounds gather in one place, the different cultures and perceptions may interplay in their communication. This

phenomenon is the major interest of intercultural communication researchers. They have attempted to discover how people from different cultures communicate and interact. They also research how people adjust in a new culture (Asante & Gudykunst, 1989).

Importance of intercultural communication. Understanding intercultural communication is especially important for three reasons. First, current classrooms are increasingly diverse in terms of race and ethnicity. Powell and Andersen (1994) asserted that educators must understand how culture influences classroom communication. Second, as information and communication technologies (e.g., web, mobile, virtual word, etc.) advance, people can more frequently and easily experience social contact with other cultures. The various cultures in the world are increasingly more accessible than before (Samovar & Porter, 1994; Spitzberg, 1994). Third, learning can occur not only within the classroom but also outside of it. As people develop a broader perspective of learning they became aware of the value of a community of inquiry where people with diverse cultural backgrounds and from diverse academic disciplines share their interests and thoughts.

Definition of intercultural communication. Intercultural communication occurs "whenever a message that must be understood is produced by a member of one culture for consumption by a member of another culture" (Porter & Samovar, 1994, p. 19). Intercultural conflicts occur where there is an incompatibility among people who have different predispositions such as different values, knowledge, expectations, processes, or outcomes (Ting-Toomey, 1994). In order to minimize communicative difficulties between different people, researchers stress having knowledge about cultural differences, skill to manage the differences, and attitudes of respect for other cultures.

Cultural differences. Intercultural communication scholars have attempted to categorize

several cultural differences, five of which are discussed in this section. First, the *high-context*

and low context culture continuum proposed by Hall (1976) explains cultural differences in

terms of general communication features. According to this theory, all communication consists

of high, low, or middle-context messages and the level of context plays an important role in

defining the nature of communication and the communicator's characteristics. Such a distinction

is utilized as the way to understand cultural differences. Hall (1976) explained:

> A high-context (HC) communication or message is one in which most of the information
>
> is either in the physical context or internalized in the person, while very little is in the
>
> coded, explicit, transmitted part of the message. A low-context (LC) communication is
>
> just the opposite; i.e., the mass of the information is vested in the explicit code (p. 79).

An HC message has an indirect and spiral pattern; is seen as an art form with only minimal

information; and is reliant on a receiver's prior knowledge and experience. In contrast, an LC

message has a linear and rule-oriented pattern; is carried in public, external, and accessible form;

and is explicit as transferable and task-centered knowledge.

Since the context levels lay along a continuum, Hall (1976) indicated "no cultures exist

exclusively at one end of the scale, some are high while others are low" (p. 79). Nevertheless,

Hall (1976) and Gudykunst (1983) indicated that the U.S. culture has the lowest context culture;

the German, Swiss and Scandinavian cultures have the next lowest context culture; and most

Asian cultures, such as Chinese, Korean, and Japanese have the highest context cultures.

Second, Gudykunst (1983) addressed the concept of *uncertainty* as an important element

when strangers communicate in the intercultural setting. According to Gudykunst, uncertainty is

the primary concern and causes communication difficulties when strangers encounter the

communication situation. Gudykunst (1983) related this concept with Hall's HC and LC cultures in an empirical and exploratory study in which participants were divided into LC and HC groups. The results of this study indicated that "people in HC cultures are more cautious in initial interactions and have a greater tendency to make assumptions based on a stranger's cultural background than do people in LC cultures" (Gudykunst, 1983, p. 49). Findings also indicate that LC culture members appear to use background interrogation less to reduce uncertainty, while HC culture members are intolerant of ambiguous situations and use background interrogation more. Such an integration of the uncertainty concept and the notion of HC/LC communication helps to understand the different communication patterns between people from different cultures. An implication is to use such understanding to develop strategies for more effective intercultural communication.

Third, the value orientation is another helpful and well-known distinction. Ting-Toomey (1994) explained that *individualism* is revealed in the culture in which "individual identity over group identity, individual rights over group rights, and individual needs over group needs" (pp. 360-361) are of great importance. In contrast, *collectivism* emphasizes "the importance of the 'we' identity over the 'I' identity, group obligations over individual rights, and ingroup-oriented needs over individual wants and desires" (p. 361). The ingroup, i.e., from the same culture, refers to the "group whose values, norms, and rules are deemed as salient to the effective functioning of the group in the society and these norms serve as the guiding criteria for everyday behaviors" (p. 361). Therefore, "while the boundary conditions between ingroups and outgroups are fairly diffused and loosely structured in individualistic cultures, [those] between ingroups and outgroups, and between memberships in various ingroups, e.g., kin, coworkers, neighbors, are more sharply defined and tightly structured in collectivistic cultures" (Triandis et al., 1986, cited

by Ting-Toomey, 1989, p. 353). Similar to the distinction between the HC and LC, Ting-Toomey (1994) indicated that "Australia, Canada, and the Unites States have been identified consistently as cultures high in individualistic value tendencies, while strong empirical evidence has supported that China, Taiwan, Korea, Japan, and Mexico can be identified clearly as collectivistic group-based cultures" (p. 361).

Fourth, how people manage their facial expressions in a conflict situation is another focal point for understanding their group orientation. Ting-Toomey (1994) concluded that in collectivistic HC cultures, typical conflicts occur due to incompatible face related management; on the other hand, in individualistic LC cultures, conflicts typically arise due to incompatible personalities, beliefs, or goal orientations. Since collectivistic HC cultures tend to maintain their facial expressions in relation to other members in their ingroup and regard their words and behaviors as a group-oriented status, "[they] are highly sensitive to the effect of what they say on others… high-context speakers must weigh their words carefully…They know that whatever they say will be scrutinized" (Cohen, 1991, p. 26, as cited in Ting-Toomey, 1994). As a result, members in HC collectivistic cultures tend to give up their interests when it conflicts with their group or social values. As Kim, Pan, and Park (1998) explained in their study, a well-known Japanese saying, "a nail that stands out gets hammered down" (p. 510) demonstrates the high value on social and group orientation.

Lastly, perspectives of time management differ between HC and LC cultures. Hall (1989) distinguished a *monochronic time schedule* (T-time) and a *polychronic time schedule* (P-time). While T-time refers to a pre-set time schedule, P-time is more flexible. Although perspectives on time management might differ among individual people, Hall (1989) indicated that T-time patterns are observed in individualistic LC cultures and P-time patterns are predominant in

group-based HC cultures. In relation to the classroom situation, Powell and Andersen (1994) explained that "a western monochronic view of time also influenced the manner in which curriculum is developed; classes and activities are structured according to a pre-established time schedule" (p. 325). This view is in contrast with the perspective from other cultures suggesting that time is managed by "when the subject matter has been thoroughly discussed rather than when the clock designates the end of a period" (R. Powell & Andersen, 1994, p. 325).

Intercultural Communicative Competences

Intercultural communication is particularly important to NNS graduate students because their academic success relies on their communicative competence (S. Zimmerman, 1995). As diverse students from various countries work together, they naturally face cultural differences which cause different communication patterns. While diversity can bring successful cross-cultural information exchanges, cultural differences sometimes bring intercultural conflicts and miscommunication. Thus, the development of intercultural communicative competence (ICC) is important in order to minimize such conflicts and miscommunication (Gudykunst & Kim, 1997). The following sections introduce the definition of ICC and models conceptualized by several scholars.

Definition of ICC. Many scholars and researchers have attempted to define intercultural communicative competence (ICC). Byram (1997) who defined ICC first, stated that ICC is "the qualities required of the sojourner" (p. 3). He indicated ICC as a significantly extended concept of communicative competence (Hymes, 1972). Byram (1997) pointed out that while Hymes' main concern was "to analyze social interaction and communication within a social group using one language"(p. 9) without considering much about cross-cultural communication, other scholars such as Canale & Swan (1980), van Ek (1986) and the Council of Europe team

emphasized the social and cultural Competences. Especially, he was interested in the model of six competences including linguistic, sociolinguistic, discourse, strategic, sociocultural, and social competence addressed by van Ek (1986); however, Byram (1997) was critical of many scholars including van Ek (1986)who tended to view "the learner as an incomplete native speaker … native speakers as a model" (p. 11). Byram (1997) argued that "the more desirable outcome is a learner with the ability to see and manage the relationships between themselves and their own cultural beliefs, and behaviors and meanings" (p.12).

In regard to various definitions of ICC and 30 years' efforts to characterize ICC, Deardorff (2007) summarized several perspectives including the "communicative nature of intercultural competence, … developmental stage, …a combination of knowledge, skills, and attitudes, … the situational aspects, and… broader definitions that encompass transnational or global competence" (p. 86) with citations of many experts in this area. Thus, Deardorff (2007) collected the key components of ICC from twenty intercultural experts by using a Delphi research technique. Throughout the research, the top-rated definition of ICC was "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (Deardorff, 2007, pp. 87-88).

Models and components of ICC. Since scholars have defined ICC differently, the models of ICC also highlight different focuses and include different components. Spitzberg (1994) explained "communication will be competent in an intercultural context when it accomplishes the objectives of an actor in a manner that is appropriate to the context and relationship" (p. 347). In consideration of effective and appropriate communication between actor and co-actor, his ICC model is constructed of three parts: the individual, the episodic, and the relational system. An individual's system includes motivation, knowledge of communication, and skills in

implementing his motivation and knowledge. An episodic system illustrates the interaction in which actor and co-actor share the episode. The relational system helps a person's competence across "the entire span of relationships" (Spitzberg, 1994, p. 350). This model consists of essential factors for successful intercultural communication. It demonstrates the ecological attributes of the competence through three levels of analysis.

Kim (1988) specifically considered long-term immigrants and short-term sojourners who experience intercultural conflicts. In this context, Kim (1988) conceptualized host communication competence as including four dimensions: (1) knowledge of the host communication system, (2) cognitive complexity, (3) affective co-orientation, and (4) behavioral competence. First, knowledge of the host communication system includes knowledge of the host language, host non-verbal behavior, and communication rules. Second, cognitive complexity refers to how people perceive the host culture. As an indicator, an individual's cognitive flexibility implies "a capacity to be mentally flexible in dealing with ambiguity and unfamiliarity" (Kim 1988, pp. 96-97). Third, affective co-orientation is the emotional drive or reflexes toward a successful adaptation in the host environment. This element includes adaptive motivation, affirmative self/emotional appreciation, and aesthetic/emotional appreciation. Fourth, behavioral competence enables the activation of knowledge, cognitive and affective elements.

Byram (1997) also built a model of intercultural communicative competence for the purpose of teaching, assessment and certification. The model includes factors involved in intercultural communication and relationships between factors. The model begins with a situation where a person interacts socially with someone from a different country. The primary focus of this model is on the interaction between native and non-native speakers or between two

non-native speakers. Byram (1997) stated that such "intercultural speakers" (p. 32) bring to the

communication their knowledge of the world to which they mainly belong and social identities

rendered by the world. In setting the purpose of communication as "the effective exchange of

information … establishing and maintenance of human relationships" (pp.32-33), he highlighted

four important factors: (1) knowledge, (2) attitudes, (3) skills of interpreting and relating, and (4)

skills of discovery and interaction. Although knowledge and attitude are pre-conditional factors,

those factors can be modified through the process in which each interlocutor brings different

skills to the interaction. Also, while skills of interpreting and relating indicate "the ability to

analyze data from one's own and from another country and the potential relationships between

them, … skills of discovery and interaction can be operated in some circumstances

independently" (p. 33). In addition, Byram's model emphasizes the integration of teaching for

intercultural communication within "a philosophy of political education and the critical cultural

awareness" (p. 33).

Fantini (2006) defined ICC as "the complex of abilities needed to perform effectively and

appropriately when interacting with others who are linguistically and culturally different from

oneself" (p.1). This definition carries two perspectives. While effectiveness refers to one's own

view of one's performance in a second language and culture, appropriateness refers to how one's

own performance is perceived by one's host (Fantini, 2006). Fantini (2006) investigated

intercultural experiences of volunteers in an international partnership program and summarized

the concept of ICC in five points. First, ICC is based on diverse characteristics related to one's

personality such as openness, flexibility, and tolerance for ambiguity. Second, ICC measures

three abilities: building social relations, communicating clearly, and collaborating for a mutual

goal. Third, ICC includes knowledge, attitudes, skills, and awareness. Fourth, ICC is related to

proficiency in the host language. Lastly, ICC relies on developmental levels from educational traveler to sojourner to professional, and to intercultural specialist.

Deardorff's (2007) model, based on the items that received 80 to 100% agreement of the top intercultural experts, highlights the iterative and cyclic features of the model. Deardorff (2007) noted that ICC begins with attitudes, such as respect, openness, curiosity and discovery; it tends to move from the individual level to the interaction level with features such as internal adaptability, flexibility, and external communication ability in an intercultural situation. The degree of ICC depends on the degree of attitudes, knowledge, and skills.

The models that describe ICC indicate its ecologically and gradually developed features by (1) incorporating individual, social (or interactional), environmental factors, (2) covering cognitive, affective, and behavioral aspects, and (3) presenting increasing knowledge, skill and attitude about (4) how to build relationships, communicate, and collaborate in the host culture (Byram, 1997; Fantini, 2005, 2006; Y. Kim, 1988; Spitzberg, 1994). While Spitzberg's model covers a human's general intercultural communication, Kim's model and Fantini's research project focus on a specific population, people who enter into and adjust to a new environment and have intercultural experiences. Unlike other models, Deardorff's model explains the process of how people develop intercultural competences from the individual to the interactional level.

Synthesis of ICC models. In a synthesis of the commonly accepted definition and existing models, ICC includes individual, interactional, and social aspects. The individual abilities are measured by knowledge, skill, attitude, and awareness about the host language and culture, and the interactional abilities are covered by adaptability, flexibility, appropriateness, and effectiveness of communication. These abilities are components that successful communicators might possess and ways to behave in intercultural communicative situations.

Such ICC is developed gradually and is influenced by multiple variables, such as the individual's personality and cultural differences. Figure 2 illustrates (1) two such aspects or levels of ICC, (2) major components of ICC, (3) the intercultural communicative situation, and (4) the iterative and gradually developed attributes.
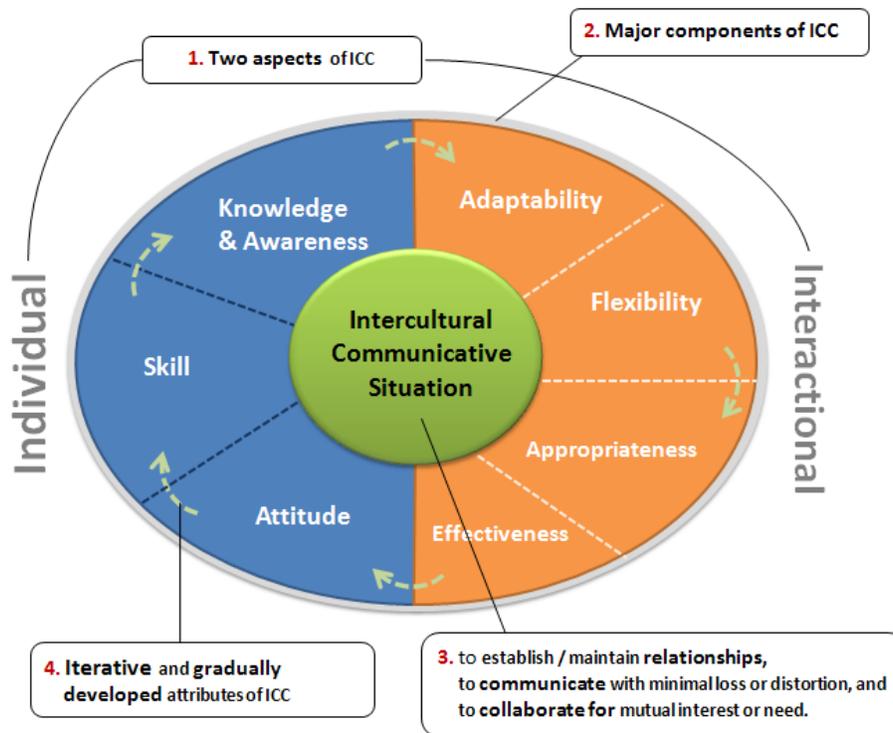
Figure 2. Relevant dimensions and components to assess NNS graduate students' ICC

The following explains Figure 2 in a detailed manner. First, the *individual's* knowledge (and awareness), skill, and attitude should manifest themselves in the assessable internal and external outcomes (Deardorff, 2007) when students are involved in the intercultural communicative situation where actual interaction occurs. Second, the major factors of ICC include attitude, skill, and knowledge (and/or awareness) about intercultural communicative situations (Byram, 1997; Fantini, 2005). Third, the specified intercultural communicative situation will involve (a) relationship building, (b) communication without misunderstanding and

distortion, and (c) collaboration for mutual interest or needs (Fantini, 2005). Lastly, the

individual's ICC is developed through the iterative cycle. For example, "as respect, openness,

and cultural curiosity increase, so does cultural knowledge… as [the] awareness and knowledge

is gained through the development of key communicative and cognitive skills" (Deardorff, 2007,

p. 91).

   Instructional design models emphasizing cultural considerations. Several IDT scholars

have strongly articulated that cultural factors in learning should be considered during the entire

process of instructional design and development. Subramony (2004) argued that IDT scholars

have neglected the cultural diversity issues affecting international students or cultural minority

students in the classroom. He also warned that the consequences from the neglect might produce

inappropriate instructional solutions. Branch (1997) stated that some ID models, such as the

Analysis-Design-Development-Implementation-Evaluation (ADDIE) model, Dick, Carey &

Carey's systematic design model, and Gagne's nine events, offer the opportunity to consider

"culture" or "cultural pluralism" during the process of instructional design. As a result, he

suggested several ways to facilitate culturally pluralistic and sensitive instruction based on the

existing ID models.

   As the most influential work, Henderson's (1996) multiple cultures model (MCM)

provided some guidelines for instructional designers to "design a learning environment that

promotes equity of outcomes for learners, particularly learners from disadvantaged minority

groups" (p. 94). Henderson (1996) argued "instructional design is socially and culturally

constructed; instructional designers do not exist in a vacuum; nor are they neutral" (p. 85).

Henderson's MCM model, based on the discussion of epistemology and pedagogic philosophy,

provides a useful framework including multiple dimensions that demonstrate a continuum

between two extremes such as the behaviorist school of instructional design and the constructivist school.

As the most recent work, Young's (2008a, 2008b, 2009) culture based model (CBM) indicates the considerations ranging from "internationalize, generic, and culture-neutral" to "localize, specialized, and cultural-specific" in designing information and communication technologies. Young provided 70 design factors in eight areas of CBM including Inquiry, Development, Team, Assessments, Brainstorming, Learners, Elements, and Training (acronym of these areas: ID-TABLET) for instructional designers to better understand "the intricacies of a society, culture, or target audience" (Young, 2008a, p. 112).

Summary

In this section, two areas (language learning and intercultural communication) have been explored to identify communicative competences on which NNS students need to focus. The area of language learning has revealed that communicative competence not only includes linguistic competence but also other competences such as discourse, actional, sociocultural and strategic Competences. Given the need for the integration of such multiple competences, NNS students need to prepare for and develop a well-balanced communicative competence that helps them to mediate socially and culturally appropriate and effective communications.

The area of intercultural communication has presented the increasing importance of cultural factors which are influenced by and influence one's communication pattern. Several concepts presented in this section are helpful in identifying individuals' cultural differences in relation to communication. Intercultural communicative competence includes attitude, knowledge, adaptation, flexibility, and communication abilities for NNS graduate students to be

more socially engaged in learning. Definitions and models describing intercultural communicative competence provide its ecological, complex, and gradually developed attributes.

It is also important for instructional designers to consider analyzing the characteristics of those learners as a step in the design process. However, there is no empirical research aiming to explore and assess NNS students' intercultural communication for the purpose of learner analysis in the field of instructional design and technology. Although any instructional design (ID) model regards learner analysis as an important process (Branch, 1997; Dick, et al., 2005; Gagné, 1965; Seels & Richey, 1994), existing ID models do not specifically indicate ICC as a vital aspect of learners to be considered. Like other characteristics such as gender, age, learning style, and previous experience, ICC can be an important factor to analyze learners.

In response to Subramony's (2004) argument that instructional designers have failed to address cultural diversity issues in the classroom and Branch's (1997) suggestions for facilitating culturally sensitive instruction, several culture-focused instructional design models have been built. Thomas, Mitchell, and Joseph (2002) pointed out that the existing ADDIE model and other structures alike only address "culture" in the initial learner analysis stage and final evaluation stage. They argued that "culture is central to meaning making and cognition in general and … ADDIE model [should be] not only iterative and multi-directional but also three dimensional [including] three parameters: intension, interaction, and introspection" (p. 42). As a comprehensive model, the third dimension of the ADDIE model illustrated by Thomas et al. (2002) suggests considering the culture intentionally in every phase of instructional design, collaborating interactively with other audiences of instructional design such as subject matter experts and end user participants; and using introspection into one's own thoughts, feelings, and actions toward the target cultures. Henderson (1996) and Young (2008a, 2008b, 2009) developed

models described in this section, which took into account the need for analysis of cultural needs of learners.

The studies and models introduced above demonstrate profound and thoughtful considerations of culture-related issues and cultural diversity in the aspects of instructional design. While such research and efforts for model building commonly emphasize considering the complexity of cultural issues and reflecting them into instructional design practices, no empirical research describes the unique characteristics of certain culturally and linguistically diverse groups and analyzes their intercultural communicative competence. Therefore, this study can offer practical help for instructional designers to better understand the characteristics of culturally diverse groups and to prepare appropriate and effective instructional solutions.

In addition, the existing models do not specifically indicate preliminary conditions that learners should possess for culturally appropriate and effective communication in learning. The previous models tend to disregard the importance of intercultural communicative competence of learners as instructional design considerations. As a follow-up study that emphasizes the cultural competences of instructional designers and consideration of cultural factors in learning, it is necessary to investigate the intercultural competences of culturally diverse target learners. In this regard, the concepts and components of ICC are expected to substantially enrich existing ID models which emphasize the learner characteristics and culture related issues or cultural diversity. The content discussed in this section can be particularly utilized to develop an instrument to assess the ICC of NNS graduate students.

Instructional Design Strategies for Socially Engaged Learning

Reigeluth (1999) states that while learning theories are descriptive, instructional design theories are prescriptive. The goal of this research – to discover instructional design implications

for NNS graduate students – is similar to preparing a prescription for them. The prescription must be based on theoretical foundations of learning that explain how those students can better learn and improve their performance more effectively.

Given that the major characteristics of the target learners discussed in previous sections are cultural diversity and need for social adjustment and intercultural communicative competence, this review of literature should include the theories that are related to sociocultural aspects of learning. Therefore, this section includes the review of (1) social learning theory (Bandura, 1977), explaining an individual's social and psychological functioning; (2) sociocultural theory (Vygotsky, 1978) and activity theory (Engeström, 1987; Leont'ev, 1978), explaining social and cultural impacts on learning; and (3) situated learning theory (Brown, et al., 1989; Lave & Wenger, 1991), emphasizing the effect of gradual involvement in the community of practice.

Social Learning Theory

Social learning theory deals with the acquisition and regulation of human behavior (Bandura, 1977). This theory, also known as social cognitive theory, is derived from behaviorism but explains cognitive development in the contextualized perspective (B. Zimmerman, 1983). Two fundamental concepts support this theory: (1) reciprocal determinism and (2) observational learning. The first point implies that "behavior, other personal factors, environmental factors all operate as interlocking determinants of each other" (Bandura, 1977, pp. 9-10). That is, this theory expresses the view that "people are not driven by either inner forces or environment stimuli in isolation" (Burton, Moore, & Magliaro, 1996, p. 12). The second point implies that persons can learn by observing others' behavior. Bandura (1977) noted "human thought, affect,

and behavior can be markedly influenced by observation, as well as by direct experience" (p. vii) with the psychological functions in vicarious, symbolic, and self-regulatory processes.

Social learning theory has influenced many areas such as personality or sociability development and self-efficacy as a predictor of behavior. The most professional influences in IDT are modeling and self-regulated learning strategies. First, modeling is explained by four steps: (1) attention, in which learners pay attention to the modeled events; (2) retention, which means that they construct a cognitive representation by remembering; (3) reproduction, in which they transform remembered information into appropriate forms for a new context; and (4) motivational processes, which make them more likely to perform modeled events when actions lead to positive consequences (Bandura, 1977, 1986; Driscoll, 2005). While the first two steps are related to acquisition, the last two indicate regulation of performance. The distinction implies that people do not perform everything they have observed, rather they control their own behavior through the self-regulatory function (Bandura, 1977). The self-regulatory function conceptualized by Bandura (1986) includes three key sub-processes: (1) self-observation, the stage of gaining information, (2) judgment process, the stage of comparing present performance with one's goal, and (3) self-reaction, the stage of progressing the motivational effects. The modeling and self-regulatory functions have been applied in many educational settings and have been proved as effective learning strategies. For example, modeling strategies and self-regulation strategies enhance students' self-efficacy which implies people's belief in their capabilities (Bandura, 1997) and learning achievement (Schunk, 1984; Schunk & Hanson, 1985).

This theory can be applied to the process of learning that NNS graduate students experience while attending a U.S. university. For example, as the students observe and contact other students speaking their target language, and experience the host culture, they firstly

observe the proper use of language, practice using it through the self-regulatory process, and finally, function appropriately in the new environment. Thus, useful instructional strategies for NNS graduate students might be the appropriate use of modeling and guidance to develop their own self-regulative learning strategies. Such self-regulation strategies include goal setting, planning, self-monitoring, attention control, application of learning strategies, self-monitoring, appropriate help-seeking, self-evaluation, and self-reflection (Ormrod, 2007).

Sociocultural and Cultural-Historical Activity Theory

Sociocultural theory, originated by Vygotsky (1978), views learning as "a profoundly social process" (p. 131). This theory emphasizes the social interaction between individual and environment (social, situated, cultural, and contextual perspective) beyond mental functioning between human thought and behavior (individual cognition perspective). Such importance of the social aspect of learning is conceptualized by the zone of proximal development (ZPD) defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). This concept highlighting the role of more capable peers has been applied in several instructional strategies such as instructional scaffolding and reciprocal teaching.

Vygotsky's (1978) sociocultural theory has been succeeded by Russian cultural psychologists (Leont'ev, 1978; Luria, 1981) and today's scholars in the international and multidisciplinary perspectives (Engeström, 1999). The notion of *mediation* is a milestone of the cultural-historical approach. It implies several points: (1) the use of tools is a *cultural* feature of human beings (Luria, 1928); (2) "every elementary form of behavior … requires an intermediate link " (Vygotsky, 1978, p. 39); and (3) "the simple stimulus and response is replaced as a

complex mediated act" (Vygotsky, 1978, p. 40). Such a notion of mediation is reformulated as the basic format of activity theory including the triangle of subject (S), object (O), and mediated artifact (M). While the base of the triangle (direct connection of subject and object) indicates the natural and unmediated functions, the vertex of the triangle (an auxiliary means) indicates cultural and mediated functions (Cole & Engeström, 1993).

The concept of mediation is completed by the activity system conceptualized by Leont'ev (1978) who highlighted the "collective nature of human activities" (Cole & Engeström, 1993, p. 7) and Engeström who expanded it with a graphical model. Engeström (2001) explains that the triangle of S,O, and M is the "tip-iceberg to represent individual and group actions embedded in a collective activity system" (p. 134). In regard to the expanded activity system, Cole and Engeström (1993) state that:

> individuals (subject) are constituted in communities; the relations between *subject* and *community* are mediated on the one hand by the groups' full collection of *mediating artifacts*, on the other hand by *rules* (the norms and sanctions that specify and regulate the expected correct procedures and acceptable interactions among the participants); communities, in turn, imply *a division of labor*, the continuously negotiated distribution of tasks, powers, and responsibilities among the participants of the activity system. (p. 7)

The cultural historical activity theory described above has increasingly impacted on the area of learning and teaching and the area of human and computer interaction (HCI) (Engeström, Miettinen, & Punamakin, 1999). The professional influences in IDT include (1) interaction design, and (2) the design of the student-centered learning environment. First, several interaction design principles derived from activity theory have been usefully recognized in HCI and the computer supportive working environment (CSCW). As an example, the theory suggests using

the "activity" as a unit of analysis in isolation (Wertsch, 1991). Kuutti (1996) explains that since human actions are always situated in a context, activity can be a useful unit as a "minimal meaningful context for individual actions" (p. 26).

Second, such strategies for interaction design become useful in the design of a student-centered learning environment. Uden (2007) elicits the design strategies from this theory and applies them in designing a mobile computer supported collaborative learning environment. The specific strategies include clarifying the purpose of the activity, analyzing the context for learning and use, analyzing the history of the activity and its components and actions, and sharing information and resources to prevent internal conflicts.

The theories and strategies described above can be useful in facilitating the interaction of NNS graduate students with other members and the new environment. As previous research suggests, the academic success of NNS international graduate students relies on their social contact with other members in the community. This theory supports that NNS students can be effectively engaged in learning through frequent and meaningful social interaction in the activity system. Also, providing appropriate scaffolding in their learning and adjustment process might be useful. Since international students can bring different perspectives and skills, collaborative learning and reciprocal teaching can be effectively utilized in the graduate program. Lastly, activity theory suggests analyzing the learner's culture and context, providing clear purpose of activity, and contextualizing their learning. Such strategies are expected to facilitate not only students' motivation but also their learning transfer for future application.

Situated Learning Theory

Situated learning is defined as the notion of "learning knowledge and skills in context that reflect the way the knowledge will be useful in real life" (Collins, 1988, p. 2). This theory,

also known as situated cognition theory, is a "new and existing interdisciplinary synthesis" (Pea & Brown, 1991, p. 11) supported by scholars and practitioners from diverse fields. Three areas with a great emphasis on social aspects of learning have contributed to this theory.

First, the educational psychology and cognitive science tradition have recognized the "unbalances between school learning and learning outside of school" (Resnick, 1987, p. 4) and the gap between knowing and doing (Brown, et al., 1989). Second, sociocultural theory by Vygotsky and his collaborators contributes to extending the social perspective on learning beyond structured and institutional pedagogy (Greeno, Collins, & Resnick, 1996; Kirshner & Whitson, 1997; Lave & Wenger, 1991; Schuh & Barab, 2008). Unlike activity theory that focuses on the structures and interrelations within activity systems, this theory focuses on "connecting issues of sociocultural transformation with the changing relations between newcomers and old-timers in the context of a changing shared practice" (Lave & Wenger, 1991, p. 17). Lastly, the anthropological and sociological areas significantly impact the formation of major concepts of this theory. They claim the distance between the lab and the real world situation; address everyday cognition (Rogoff & Lave, 1984); highlight the context of everyday activity (Henning, 1996); and conceptualize legitimate peripheral participation.

Legitimate peripheral participation (LPP) explains the process by which newcomers gradually and increasingly acquire the knowledge and skills, and transform their identities in the community of practice (Lave & Wenger, 1991). The community of practice is generated in actual cases of apprenticeship. Lave and Wenger (1991) find historically and culturally specific examples in the community of midwives, tailors, quartermasters, butchers, and alcoholics. Community of practice is illustrated by a small and informal group where people share their knowledge, learn intricacies of jobs, explore the meaning of work, and construct an image of the

community, rather than "well-defined and identifiable group or socially visible boundaries" (Lave and Wenger, 1991, p. 98). Such a group is also distinguished from other practice fields. Barab and Duffy (2000) point out that a community of practice must have a sustainable community with a significant history and include shared goals, beliefs, practices and a collection of experiences.

The concepts in situated learning have influenced several important instructional design frameworks in IDT. The representative concepts are: (1) cognitive apprenticeship, (2) anchored instruction, and (3) learning communities. First, cognitive apprenticeship is a framework which takes the features of the traditional apprenticeship and applies them to the school subjects such as reading, writing and mathematics (Collins, Brown, & Holum, 1991; Collins, Brown, & Newman, 1989). Unlike the traditional apprenticeship in which the processes of the activity are visible, thinking processes in subjects of schooling are often invisible. The major instructional strategies of cognitive apprenticeship are to make such invisible thinking to be visible and practical (Collins, et al., 1991). Thus, the major roles of instructional designers and instructors are to (1) identify the process of the task, (2) situate abstract tasks in authentic contexts, and (3) vary the specific conditions of situations while articulating the common aspects.

Second, anchored instruction shares the idea of situated cognition that makes use of the inert knowledge problem. Thus, this instructional framework is developed in order to create "environments that permit sustained exploration by students and teachers and enable them to understand the kinds of problems and opportunities that experts in various areas encounter and the knowledge that these experts use as tools"(CTGV, 1990, p. 3). As an exemplar project, the Jasper Woodbury Series conducted by Cognition and Technology Group at Vanderbilt (CTGV) highlights complex problem solving, "what if" thinking, and cross-curricular extensions

including mathematics, science, history, geography, etc. (CTGV, 1992). The remarkable instructional strategy incorporated in this project is the embedding of all the data needed to solve the problem in an interesting story. This method has been recognized as a useful approach to increase not only students' motivation but also their problem solving ability.

Third, a learning community is a visible format of a community of practice. As an early work, Computer-Supported Intentional Learning Environment (CSILE), a knowledge-building community (Scardamalia & Bereiter, 1994), allowed students to access a common database including information in several media (text, drawing, graphs, timelines, etc.) where they could retrieve, link, and add comments in the learning community (Scardamalia, Bereiter, Mclean, Swallow, & Woodruff, 1989). As the popularity of online (or virtual) learning has grown, many other fields have incorporated learning communities or knowledge building systems. For example, Brown and Duguid (1991) report that conventional ways in which organizations use manuals, training programs, or job descriptions do not usually contribute much to the ways people actually work. Learning community is a "unified view of working, learning, and innovating" (p. 40) and can make it possible to redesign organizations and improve their work quality.

The described concepts and instructional strategies derived from situated learning theory are helpful in explaining the learning of NNS graduate students. Especially, the community of practice illustrates the process that successful NNS graduate students can experience. That is, active and steady involvement and participation, and a newly formed social identity within the community of practice might be highly important for their academic success. Also, other instructional strategies such as the use of authentic tasks and contextualized learning methods can effectively drive NNS graduate students' learning.

Synthesis: Socially Engaged Learning

In reviewing the commonalities of social theories of learning, socially engaged learning comprises four key points: gradual engagement, rich cultural context, self-regulation ability, and integration of communication tools. That is, socially engaged learning is defined as a learning environment where learners are gradually involved in the rich cultural context, the learner's self-regulation ability is encouraged for active participation, and communication tools are effectively and appropriately integrated in the intercultural learning situation. The flow of theoretical backgrounds and notions of socially engaged learning is illustrated in Figure 4.
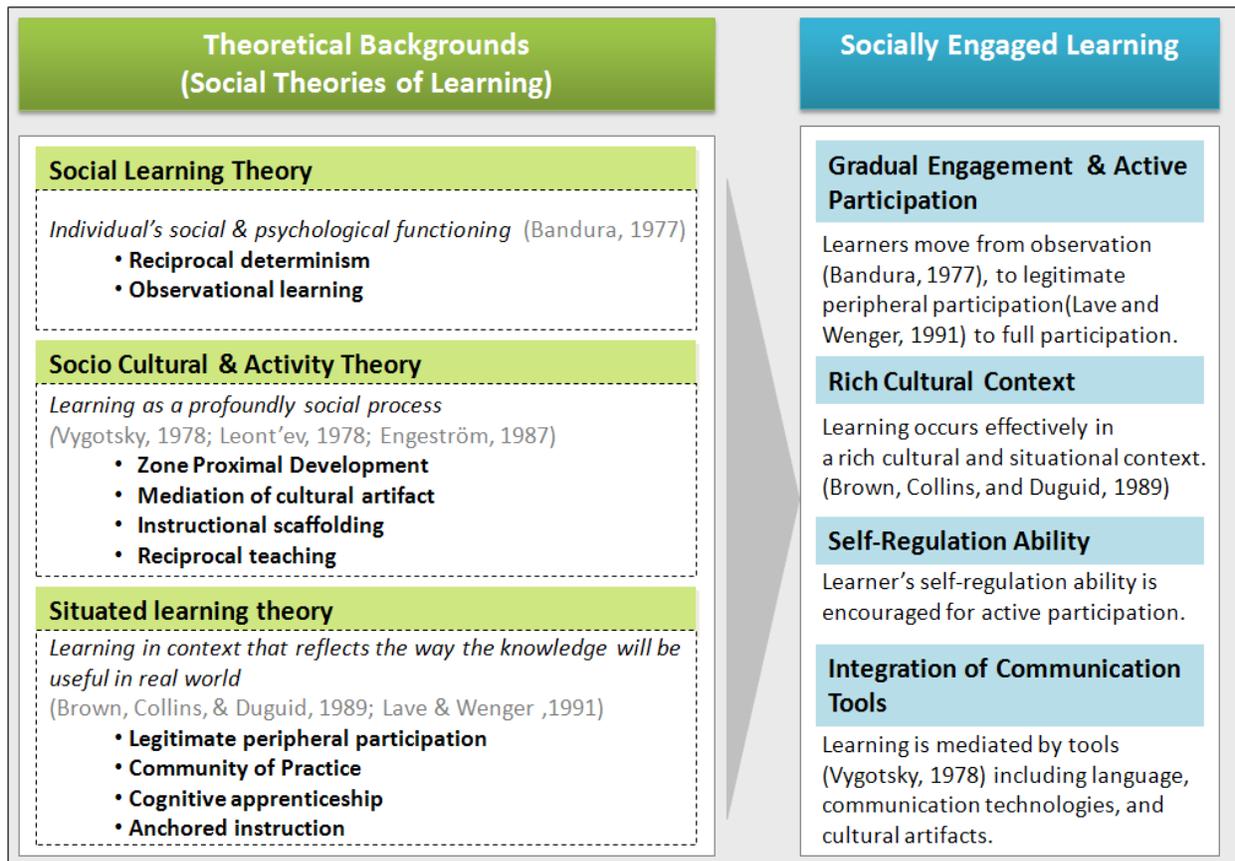
Figure 3. Theoretical backgrounds and notions of socially engaged learning

In addition, socially engaged learning is an extended concept of engaged learning which establishes the students, more positively, as active learners, requiring a high level of learner

participation, responsibility for learning, learning with authentic tasks or problems, and collaboration with other students in shared and flexible roles (Brill & Park, 2008; Bulger, et al., 2006; Hung, et al., 2006). Several scholars have developed and categorized the indicators of engaged learning.

Jones, Valdez, Nowakowski, and Rasmussen (1994) provide a comprehensive and useful set of eight indicators of engaged learning, and suggest that the following are important: (1) a vision of learning, (2) authentic and multidisciplinary tasks, (3) performance-based, generative, seamless, and equitable assessment, (4) interactive and generative instructional model, (5) collaborative, knowledge-building, empathetic learning context, (6) heterogeneous, equitable, and flexible groupings, (7) teacher as a facilitator, guider, and co-learner/investigator, and (8) student as an explorer, cognitive apprentice, teacher, and producer. Jones and his colleagues (1994) refined and expanded a study on the seven indicators identified by Means and her colleagues (1993) which was grounded in observations of successful practice.

Hung, Tan and Koh (2006) offer an engaged learning framework including problem ownership, collaboration, monitoring, role of experts, and use of tools. This framework was derived from a rather robust review of learning theories based on constructivism, situated cognition, authenticity in learning, self-regulated learning, and problem based learning.

Wang and Kang (2006) have grouped indicators of engagement into three domains – cognitive, emotional, and social engagement. Each domain highlights (1) self-regulative, responsible, and generative learning; (2) confident, secure, comfortable, and curious feeling; and (3) sharing resources and information, cohesiveness, acceptance, and collaborative learning.

Theoretical backgrounds and literature-based frameworks for engaged learning, such as those discussed here, help to organize and develop critical instructional design strategies for socially engaged learning. The following explains the four derived categories.

The first category is gradual engagement and active participation. A common argument of three social theories of learning is that learning occurs through the gradual involvement and active participation in the community of practice. It emphasizes observation (Bandura, 1977) to legitimate peripheral participation and to full participation (Lave & Wenger, 1991). During this engagement process, social interactions with the assistance of more capable persons are pivotal (Vygotsky, 1978). The design implications for NNS graduate students in this category are the following:

- NNS graduate students can effectively learn given structured guidelines and instructional scaffolding (e.g., appropriate questions, tasks, and explanations in order for them to go the next steps) with the assistance of more experienced people.

- They can perform well given appropriate models (e.g., successful sample practices) in order to observe, interpret, and apply them to their own work.

- They can perform effectively through frequent social interactions such as reciprocal teaching, group working, team working, etc.

The second category is rich cultural context. This category implies that learning occurs in the rich cultural and situational context. Thus, learning occurs effectively when it is embedded in authentic tasks, problems, and projects. Also, it is important to analyze a learner's culture so that he or she can understand both implicit and explicit knowledge based on their cultural and

historical background (Brown, et al., 1989; Hung & Chen, 2001). Specific implications for NNS graduate students are the following:

- NNS graduate students can effectively learn with their own authentic tasks, problems, and projects.

- They can effectively understand the meaning when rich contextual information is provided.

- NNS graduate students' learning can be motivated through a cultural and historical activity where new knowledge and their previous experiences (probably formulated in their home culture or context) are effectively connected.

The third category, self-regulation, implies that learning is ultimately driven by an individual's effort and self-control. Thus, it is important to provide appropriate guidance for students' self-regulative learning ability. The implications for NNS graduate students are:

- NNS graduate students can effectively learn when they choose their own goal and process of work.

- They can effectively perform when the quality of their work is self-monitored and evaluated.

- They can efficiently learn when they reflect and write something that they missed or found difficult, and seek help from other fellow students or other experts.

The last category is integration of *communication technology*. According to Vygotsky (1978), learning is mediated by tool. The tool includes language, technology, and other cultural artifacts. Thus, instructional design for NNS graduate students should consider the aspect of effective technology to support their linguistic and cultural differences. The implications for NNS graduate students are:

- NNS graduate students can effectively learn given the use of computers (e.g., e-mail, or bulletin board in a learning management system) to communicate with instructors and other students.

- They can effectively learn when they participate in an asynchronous discussion (e.g., discussion board and e-mail) rather than a synchronous environment (e.g., chatting, conferencing, and face-to-face discussion).

Summary

In this section, three social theories of learning (social learning theory, sociocultural and cultural historical active theory, and situated learning theory) have been reviewed to identify the effective instructional strategies for helping NNS graduate students become more socially engaged in learning. Although each theory's origins, roles, and contributions are different, the main contribution of social theories of learning is their strong response to conventional learning or "school-forged theories" (Lave & Wenger, 1991, p. 61) which rely heavily on or focus on the acquisition of knowledge and individual's cognition. The common emphasis of social theories of learning is the situational and contextual nature of learning. In other words, human beings do not live in a vacuum but are embedded in their sociocultural context, and their behavior cannot be understood independently of that context (Engeström, et al., 1999; Paavola, Lipponen, & Hakkarainen, 2004). Such a theoretical perspective can be especially necessary for NNS graduate students because those students are culturally and linguistically diverse; they share common difficulties from cultural differences, linguistics barriers, and social adjustment problems; and they came to be socialized in a new environment and to experience valuable cross-cultural learning experiences rather than to be isolated in a context- or culture- free vacuum.

Although each theory provides useful insights for teaching and learning of NNS graduate students, in this section, an effort has been made to synthesize the theories into a framework, called socially engaged learning. In addition, four major concepts of socially engaged learning are helpful in eliciting practical instructional design strategies for NNS graduate students. The concepts are (1) gradual engagement and active participation, (2) rich cultural context, (3) self-regulation, and (4) integration of communication technology. However, although the derived instructional strategies are based on theoretical grounds aforementioned and include consideration of critical points of each social theory of learning, these strategies have not been empirically applied to a real situation, nor verified through NNS graduate students' response and voice. The need is evident for a study to investigate the perceptions of NNS graduate students in regard to effective instructional design strategies for socially engaged learning as well as intercultural communicative competence that was discussed in the previous section.

Several IDT scholars have conducted research on teaching and preparing culturally diverse students and concluded that more research is needed about those unique students. Ku et al. (2008) emphasized a continued need to address academic support mechanisms for international doctoral students and called for more research to learn their perceptions regarding the kind of supports which can help those students achieve success in the academy. McLoughlin (1999, 2001), focusing on online learning situations, discussed culturally sensitive and appropriate design for diverse students and noted that instructional designers should be aware of students' sociocultural backgrounds and learning styles. McLoughlin (2001) stated that the aim of culturally inclusive design is to ensure that "pedagogy and curriculum are flexible, adaptable and relevant to students from a diverse range of cultural and language backgrounds" (p. 7). Gay (2002), focusing on special education for ethnically diverse students, argued that culturally

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responsive teaching should be considered for those who are not part of the majority and

mainstream of schools and society. Although the perspectives introduced above were cases of

specific environments (doctoral mentoring program, online learning, and special education), the

common theme shows the clear need for research on instructional design implications for

culturally diverse students like NNS graduate students.

Chapter 3: Methodology

The purpose of this research was to describe characteristics of NNS graduate students and to suggest effective instructional design strategies for them to become more socially engaged and to successfully study in a U.S. graduate program. For this purpose, this study focused on investigating their perceptions on intercultural communicative competence (ICC) and effective instructional strategies for socially engaged learning. The research questions are the following:

1. What are the perceptions of NNS graduate students in regard to their intercultural communicative competence (ICC)?

2. What are the perceptions of NNS graduate students in regard to the effective instructional strategies for their socially engaged learning?

This chapter outlines the approach that was used to answer the above research questions. It includes (1) research design, (2) research setting and participation, (3) instrument, (4) research quality, (5) data collection, (6) data analysis, and (7) research limitations.

Research Design

This study employed a descriptive and quantitative approach using a survey method. The survey is the most common descriptive methodology in educational settings when a researcher wants to report characteristics of specific individuals, groups or physical environments (Fraenkel & Wallen, 2006). Basically, the purpose of survey research is to generalize "from a sample to a population so that inferences can be made about some characteristic, attitude, or behavior of this population" (Creswell, 2003, p. 154). The survey for this study was designed to investigate the perceptions of NNS graduate students attending U.S. universities on their intercultural communicative competences and effective instructional strategies.

Survey research is appropriate (1) when the population needs to be studied *as a whole*, and (2) when the researcher wants to find out how the members of the population distribute themselves on one or more variables such as age, gender, and ethnicity (Fraenkel & Wallen, 2006). The survey method was an appropriate choice for this research because this researcher was interested in knowing about *diverse* NNS international graduate students; further, this study focused on how such diverse members' perceptions differed in relation to their demographic backgrounds.

This study used a cross-sectional survey method rather than a longitudinal one, with the data collected at one point in time (Creswell, 2003). This method involved preparing a written self-administered questionnaire and distributing it to a diverse sample from the target population. As the data collection vehicle, a web-based survey was chosen so as to involve a large number of participants and to accelerate the process of data collection and analysis.

<center>*Research Setting and Target Population*</center>

The total number of international graduate students enrolled in U.S. universities in 2007 and 2008 was 276,842. As a land-grant university, Virginia Tech currently ranks 48th among the leading U.S. institutions with more than 1,000 international students (Open Doors, 2008). According to Virginia Tech (2010), of its 4,555 enrolled graduate students, 1,644 are international graduate students. Considering the proportion of international graduate students at the university (around 36.09%), Virginia Tech was a reasonable research context in which to conduct this study. However, the results of this study cannot be generalized beyond the context of a single institution, Virginia Tech.

The target population of this study was defined as international graduate students enrolled at Virginia Tech. Since this research targeted NNS students, international graduate students

<center>58</center>

whose native language was English were excluded from the sample. The Virginia Tech Office of

Institutional Research and Effectiveness provided the student enrollment status through their

website. Table 1 gives the distribution of the background characteristics of international graduate

students who were enrolled in spring 2009.

Table 1

Background Characteristics of International Graduate Students at Virginia Tech

Background Characteristics		Number	Percentage
Graduate Students			
	Domestic	2,911	64
	International	1,644	36
Gender			
	Male	1,131	69
	Female	513	31
Degree			
	Masters	526	32
	Doctoral	1,060	64
College			
	Agricultural and Life Science	97	6
	Architecture and Urban Studies	68	4
	Business	120	7
	Engineering	881	54
	Liberal Arts and Human Sciences	71	4
	Natural Resources	42	3
	Science	252	15
	Veterinary Medicine	27	2
	Inter College	86	5
Nation of Residence			
	China	572	35
	India	419	25
	South Korea	130	8
	Iran	57	3
	Taiwan	42	3
	Egypt	33	2
	Turkey	33	2
	Germany	27	2
	Thailand	24	1
	France	17	1
	Etc. (Mexico, Italy, Nepal, Colombia, Pakistan, Saudi Arabia, Bangladesh, Canada, Peru, Greece, …)	338	21

Instrument

The major instrument of this study was a written questionnaire. The content of the questionnaire was designed based on the literature review and included both closed-ended and open-ended questions. The survey items were divided into three parts: (1) background information, (2) intercultural communicative competences, and (3) instructional design strategies for socially engaged learning. Table 2 presents the survey items and alignment with research questions.

Table 2
Research Questions and Survey Items

Research Questions	Survey Items	Type
	Part 1. Background information Gender, Marital status, Degree, Age, Nationality, Native language(s), College, Major, Previous job experience, etc.	Multiple choices and short answers
RQ1. What are the perceptions of NNS graduate students in regard to their *intercultural communicative competence (ICC)*?	**Part 2. Intercultural communicative competence** Please rate yourself in what extent you are able to communicate appropriately and effectively in intercultural situation. (Details are in Table 3)	Likert scale
RQ2. What are the perceptions of NNS graduate students in regard to the *effective instructional strategies for their socially engaged learning*?	**Part 3. Instructional design strategies for socially engaged learning** Please indicate how importantly you think of each instructional strategy for socially engaged learning as you attending in a U.S. university graduate program. (Details are in Table 4)	Likert scale

Part 1: Background Information

Part 1 collected background information of respondents. The items included some demographic information such as gender, marital status, degree, age, nationality, native language(s), and their academic program. In addition, this section incorporated items about the respondent's previous working experience, length of study in the U.S., pre-arrival language preparation, and prior intercultural experiences. These variables were included in this research framework because previous literature indicated that such items may influence their social adjustment, intercultural competence, and academic performance (Al-Sharideh & Goe, 1998; Fantini, 2006; Poyrazli & Kavanaugh, 2006; Trice, 2003). Such variables were expected to make clearer interpretations possible relevant to the identified research questions. Also, the inclusion of extraneous variables was expected to increase the study's external validity (Pedhazur & Schmelkin, 1991).

Part 2: Intercultural Communicative Competences

Survey items of Part 2 – Intercultural Communicative Competences (ICC) were constructed based on five categories: (1) Attitude – respect and openness, and curiosity and discovery, (2) Skills – acquisitive and applicative skills, (3) Knowledge and Awareness – cultural and sociolinguistic knowledge, (4) Internal outcome – adaptability and flexibility, and (5) External outcome – effective and appropriate communication. Table 3 presents the categories, factors, and descriptions for survey items related to ICC.

Table 3

Factors and Descriptions for Survey Items of Intercultural Communicative Competences

Category	Factors	Descriptions of Survey Items
Attitude	Respect & Openness	• Valuing other cultures (Deardorff, 2007) • Open toward intercultural learning and to people from other cultures (Deardorff, 2007) • Withholding judgment (Byram, 1997; Deardorff, 2007)
	Curiosity & Discovery	• Tolerating and engaging ambiguity (Deardorff, 2007) • Willing to seek out or take up opportunities to engage with otherness (Byram, 1997)
Skills	Acquisitive (input)	• Acquiring new knowledge of a culture and cultural practices (Byram, 1997) • Listening, observing, and evaluating
	Applicative (output)	• Interpreting a document or event from another culture (Byram, 1997) • Explain it and relate it to documents or events from one's own (Byram, 1997) • Analyzing, interpreting, and relating (Deardorff, 2007)
Knowledge & Awareness	Cultural Knowledge	• Understanding other's world views (Deardorff, 2007) • Knowing historical and contemporary relationships between one's own and target countries (Byram, 1997) • Understanding the value of cultural diversity (Deardorff, 2007)
	Sociolinguistic Knowledge	• Knowing the relation between language and meaning in social context (Deardorff, 2007) • Understanding the role and impact of culture and the impact of situational, social, and historical contexts involved (Deardorff, 2007) • Understanding the communication system of target culture (Y. Kim, 1988)
Internal Outcome	Adaptability	• Adjustment to new cultural environment (Deardorff, 2007; Y. Kim, 1991) • Ability to adapt to varying intercultural communication and learning styles (Deardorff, 2007)
	Flexibility	• Cognitive ability to switch frames from etic to emic and back again (Deardorff, 2007) • Mental ability to deal with ambiguity and unfamiliarity (Y. Kim, 1988)
External Outcome	Effective Communication	• Achievement of valued objectives (Deardorff, 2007; Spitzberg, 1994)
	Appropriate Communication	• Avoidance of violating valued rules (Deardorff, 2007; Spitzberg, 1994)

The following describes the concepts which were transformed into items for the survey instrument. First, *attitude* is a fundamental and important starting point (Byram, 1997; Deardorff, 2007). Attitude is an essential element in the acquisition of knowledge (Deardorff, 2007) and indicates the "curiosity and openness of readiness to suspend disbelief and judgment with respect to others' meanings, beliefs and behaviors" (Byram, 1997, p. 34). Second, *skills* for ICC indicate one's practical abilities both for acquiring new knowledge by listening, observing, and evaluating, and for applying knowledge by analyzing, interpreting, and relating in the new situation (Byram, 1997; Deardorff, 2007). Third, *knowledge and awareness* include deep cultural knowledge and sociolinguistic knowledge. Deardorff (2007) noted that "the understanding of others' world view" had 100% agreement by intercultural experts as an important element of ICC. Also, knowing or being aware of historical and contemporary relationships between one's own and the target culture (Byram, 1997), and the value of cultural diversity (Deardorff, 2007) have been recognized as important elements. Sociolinguistic knowledge indicates knowing the relation between language and meaning in the social context, the role and impact of culture, the impact of situational, social, and historical contexts involved (Deardorff, 2007), and the overall communication system of the target culture (Y. Kim, 1988).

The individual level of ICC (attitude, skills, and knowledge) is expanded to internal and external outcomes through diverse and frequent intercultural communicative situations. Adaptability and flexibility, as desired internal outcomes of ICC, play a vital role in achieving appropriate and effective communication (Deardorff, 2007). *Adaptability* implies "the individual's capacity to modify some of the old cultural ways, to learn and accommodate some of the new cultural ways, and to creatively find ways to manage the dynamics of cultural difference/unfamiliarity, intergroup posture, and the accompanying stress" (Y. Kim, 1991, p.

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268). *Flexibility* means the cognitive ability to switch a frame from the outsider's etic view to the insider's emic view and back again (Deardorff, 2007). Kim (1988) also highlighted cognitive flexibility as a capacity "to be mentally flexible in dealing with ambiguity and unfamiliarity" (p. 97). A desired external outcome is the ability to communicate effectively and appropriately in intercultural communicative situations. According to Spitzberg (1994), while *effectiveness* indicates the achievement of valued objectives, *appropriateness* means the ability to avoid violating valued rules. Therefore, this external outcome as well as other components ultimately can answer the question "to what extent are you able to communicate appropriately and effectively in intercultural situations?"

To develop a complete questionnaire for the survey instrument, this study referred to an existing assessment tool developed by Fantini (2000, 2006) and rearranged the items based on the framework described in Table 3. The existing instrument of ICC (Fantini, 2000) is a self-assessment tool designed for four different groups of people – (1) educational travelers, (2) sojourners, (3) professionals, and (4) intercultural specialists – to assess their ICC level and utilize the result as a guideline for self-development. The original instrument, called Your Objectives, Guidelines, and Assessment (YOGA), consists of four educational objectives with 87 items including 21 awareness items, 18 attitude items, 24 skills items, and 23 knowledge items based on Bloom's taxonomy. This instrument has been utilized for several research projects. First, a research project directed by Fantini (2006) utilized this tool to assess ICC levels of alumni, volunteers, and host mentors who participated in the *Federation of the Experiment in International Living* (FEIL) program and stayed in Ecuador, Great Britain, and Switzerland. In the test of reliability of inter-item consistency in this research, the Cronbach Alphas indicated 0.824 and 0.892 for beginning and end of service responses, respectively.

Another research study (Peng, Lu, & Wang, 2009) that employed Fantini's YOGA inventory measured the ICC levels of high school students from Taiwan and the U.S. This study modified the original YOGA instrument developed by Fantini for those students, adopting only questions from the educational traveler and sojourner levels and translating them into Chinese for the students from Taiwan. This study conducted pre- and post-tests of computer-mediated language learning. The result of the research indicated that there were moderate to substantial relationships among the four ICC dimensions of awareness, attitude, skills, and knowledge.

While Fantini's YOGA inventory is a useful and reliable tool to measure ICC level, it only includes awareness, knowledge, skill, and attitude and does not include the internal outcomes such as flexibility and adaptability and external outcomes such as appropriateness and effectiveness. Therefore, it was necessary to make survey items for internal and external outcomes of ICC based on the framework prepared for this study. Also, because Fantini's instrument was developed based on four different groups of people, the final questionnaire needed to be revised for the target subjects of this research, NNS graduate students were who staying in the U.S. short-term for educational purposes.

By referring to the items from Fantini's YOGA inventory as well as other resources (Byram, 1997; Deardorff, 2007; Fantini, 2000; Y. Kim, 1988; Spitzberg, 1994) introduced in Chapter 2 and framed in Table 3, the draft of the survey instrument was newly developed by the researcher in November, 2009. After that, the draft instrument was revised multiple times through expert review and pilot tests. Also, each item was annotated with multiple resources noted at the bottom of Part 2. As shown in Figure 5, the superscript numbers indicate the resources that were utilized for developing the items.

Attitude (I am trying to…)	
1. respect people from different cultures including their language, values, history and traditions.[1,3]	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
2. not judge people because they are from a different culture.[1,2]	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
3. accept that there are some times that I may not always understand differences between cultures.[1]	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
4. look for opportunities to interact with culturally different people.[2]	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
Skills (I am able to…)	
5. recogniz… cultures.	
6. listen to… much eff…	

Resources:
1. Deardorff, D. K. (2007). A model of intercultural competence and its implications for the foreign language curriculum. In S. Wilkinson (Ed.), AAUSC 2006: Insights from study abroad for language programs (pp. 86-98). Boston, MA: Thomson Heinle.
2. Byram, M. (1997). Teaching and assessing intercultural communicative competence. Clevedon: UK: Multilingual Matters Ltd.
3. Fantini, A. E. (2000). A central concern: Developing intercultural competence. Retrieved September 3, 2009: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.117.8512&rep=rep1&type=pdf#page=33
4. Common European Framework of Reference for language
5. Kim, Y. Y. (1988). Communication and cross-cultural adaptation: an integrative theory. Philadelphia, PA: Multilingual Matters Ltd.
6. Spitzberg, B. H. (1994). A model of intercultural communication competence. In L. A. Samovar & R. E. Porter (Eds.), Intercultural communication: A reader (7th ed., pp. 347-359). Belmont, California: Wadsworth Publishing Company.

Figure 4. A method for annotating the resources utilized for developing survey items

Part 2 of the final instrument consisted of 20 items in five ICC dimensions: 4 attitude items, 4 skill items, 4 knowledge and awareness items, 4 internal outcome items, and 4 external outcome items. The questions employed a Likert scale from 0- *strongly disagree,* meaning the lowest competence, to 5- *strongly agree,* meaning the highest competence. The final questionnaire is in Appendix A.

Part 3: Instructional Design Strategies for Socially Engaged Learning

Part 3 of this survey measured how important or effective NNS graduate students perceived instructional design strategies for socially engaged learning to be in their experience. Table 4 summarizes the instructional design strategies for socially engaged learning in four categories which have been derived from the aforementioned social theories of learning: (1) gradual engagement and active participation, (2) rich cultural context, (3) self-regulation and learning ownership, and (4) integration of communication technologies.

Table 4

Descriptions for Survey Items Indicating Instructional Design Strategies for Socially Engaged Learning

Categories	Descriptions for Survey Items (Instructional Design Strategies for Socially Engaged Learning)

Gradual engagement and active participation

- Using instructional *scaffolding* (Collins, et al., 1989)
- Making mutual *engagement* (Wenger, 1998) through *peer reviewing and reciprocal teaching* (Vygotsky, 1978)
- Providing appropriate *models* and successful cases (Bandura, 1977)
- Facilitating frequent *social interactions* through the *collaboration* in a small group (Vygotsky, 1978)

Rich cultural context

- Using *authentic* tasks and problems (Collins, 1988; Hung & Chen, 2006; Hung, et al., 2006; B. F. Jones, et al., 1994)
- Anchoring student's *previous experiences and cultural historical backgrounds* (Engeström, 1987; Leont'ev, 1978)
- Providing rich *contextual* information (Brown, et al., 1989; Collins, et al., 1989)
- Making *diverse, equitable, and flexible* learning environment (Hung, et al., 2006; B. F. Jones, et al., 1994)

Self-regulation and learning ownership

- Requiring high *responsibility* for and *ownership of* learning (Bandura, 1986; Hung, et al., 2006; M. Wang & Kang, 2006)
- Encouraging appropriate *meta-cognitive strategies* (M. Wang & Kang, 2006)
  - o Goal setting and planning
  - o Help-seeking
  - o Self- monitoring /evaluating/reflecting (Hung, et al., 2006)

Integration of communication technologies

- Using computer-*mediated communication* for collaborative knowledge construction tool (Jonassen, 2000; Jonassen, Davidson, Collins, Campbell, & Haag, 1995)
- *Utilizing asynchronous tools* for effective communication and ensuring enough time to *reflect and articulate* (Hlas, et al., 2008)

The first category, *gradual engagement and active participation,* stems from the point that learners move from observation (Bandura, 1977) to legitimate peripheral participation and to full participation (Lave & Wenger, 1991). During the gradual and stepwise engagement process, instructional scaffolding and mutual engagement (Wenger, 1998) through social interactions with and the assistance of more capable persons (Vygotsky, 1978) are pivotal. In addition, peer review, reciprocal teaching, and collaborative working are practical learning methods to facilitate the learner's gradual engagement and active participation.

The second category, *rich cultural context,* implies that learning occurs in the rich cultural and situational context. In other words, students are more motivated and engaged in learning when it is embedded in authentic tasks, problems, activities, and projects (Hung & Chen, 2006; Hung, et al., 2006; B. F. Jones, et al., 1994). It is important to consider the learner's historical and cultural background (Engeström, 1987; Leont'ev, 1978) as well as their previous learning or working experiences so that he or she can understand both implicit and explicit knowledge based on their cultural and historical background (Brown, et al., 1989; Hung & Chen, 2001). In cases where group learning or team work is involved, grouping should be carefully considered in order for learners to experience diverse, equitable and flexible roles in a constructive, productive, and empathetic fashion (Hung, et al., 2006; B. F. Jones, et al., 1994).

The third category, *self-regulation and learning ownership,* implies that learning is ultimately driven by the individual's effort and self-control. Since socially engaged learning eventually requires high responsibility and ownership, it is important to encourage appropriate guidance for students' self-regulative learning ability. Such metacognitive strategies include learners' goal setting and planning, help-seeking, self-monitoring, evaluating, and reflecting (Bandura, 1986; Hung, et al., 2006; M. Wang & Kang, 2006).

The last category is *integration of communication technology*. As noted earlier, Vygotsky (1978) said that learning is mediated by tools, which include language, technology, and other cultural artifacts. Instructional design considerations for NNS graduate students should include the effective use of technology to support their linguistic and cultural differences. For example, using computer-mediated communication facilitates collaborative knowledge-building (Jonassen, 2000; Jonassen, et al., 1995). In relation to this, research supports utilizing asynchronous tools for ensuring effective communication and allowing enough time for learners to prepare reflective articulation (Hlas, et al., 2008).

As shown in the item descriptions in Table 3, the items in Part 3 of the final questionnaire were transformed to make them more understandable for NNS graduate students who may not have had instructional design expertise. Part 3 consisted of four categories: 4 gradual engagement and active participation items, 5 rich cultural context items, 6 self-regulation and learning ownership items, and 2 communication technologies items. These questions began with "I can better learn [with…] or [when …]". Respondents chose responses from the Likert scale levels ranging from 0 - *strongly disagree,* indicating the most unimportant, to 5 - *strongly agree,* indicating the most important. Since these items were predetermined from the literature review, the instrument provided participants an opportunity to freely add information that they thought was important with an open-ended question. The final questionnaire is in Appendix A.

Research Quality: Validity and Reliability

Validity and reliability of the instrument were considered to ensure the high quality of this research. Validity refers to the "appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores" (Pedhazur & Schmelkin, 1991, p. 30). In the context of this survey research, validity implies "whether one can draw meaningful and useful inferences"

(Creswell, 2003, p. 157) from the scores of the survey instrument. This study made several efforts to get evidence of construct validity such as referring to multiple existing resources related to the contents and structure of the survey instrument, getting experts to review the questionnaire, and conducting pilot tests.

Reliability refers to "the degree to which test scores are free from errors of measurement" (American Psychological Association, 1985, p. 19, as cited in Pedhazur & Schmelkin, 1991, p. 82). Conventionally, the reliability of the items in a survey instrument is established through coefficient alpha. Coefficient alpha was calculated both after the pilot test and for the final implementation and both times moderately high values of coefficient alpha were found. As Pedhazur and Schmelkin (1991) emphasized, "a measure cannot be valid, if it is not reliable, but being reliable it is not necessarily valid for the purpose [it is designed for]." (p. 81). Therefore, both reliability and validity should be considered equally important. The following describes in detail the procedures followed in order to improve the research quality: (1) expert review, (2) pilot test, and (3) reliability test.

Expert Review

This study incorporated critical review of four experts from the perspectives of the instructional design, foreign language learning, and international educational fields. Guiding questions as well as the paper-based survey instrument were given to the experts. Two sets of questions for different subject matter experts were prepared to help them understand the intention and direction of the expert review. The context and purpose of this study were also introduced to them through a cover letter that expressed appreciation for their agreement to participate in the review and requested their opinions about the specific survey items. The review took place during December, 2009 and January, 2010.

Appendix B includes two sets of the cover letter and questions for experts in instructional design and experts in foreign language learning and international education. In order to help the experts understand the concept of ICC and instructional strategies of socially engaged learning, all of the resources utilized for developing the survey items were attached to the cover letter (see Appendix C). The resources for the items in Part 2 included a brief summary of ICC definitions, models, dimensions, factors, and item descriptions. The resources for items in Part 3 included the definition of socially engaged learning (SEL), theoretical backgrounds, indicators of engaged learning, categories of SEL, instructional strategies for SEL, and descriptions of survey items.

The questions drawing on the perspective of instructional design were designed to check the usefulness and meaningfulness of the developed survey items. That is, reviewers were asked whether or not the items could help instructional designers' understanding about NNS graduate students' intercultural communicative competence. In regard to the items for socially engaged learning, a question asked whether the constructs of SEL were well developed enough to indicate the strategies needed for NNS graduate students to be socially engaged and successfully study in a U.S. graduate program. Another question asked whether the survey instrument could be a useful tool for instructional designers who work closely with NNS graduate students to help them prepare more effective instruction for the students.

The questions drawing on the perspective of foreign language and international education were prepared mainly to check the appropriateness of the developed survey as wells its usefulness. Thus, a question asked the experts whether or not the questions were developed to measure NNS graduate students' ICC level. In regard to the constructs of ICC, reviewers were also asked if the questions appropriately reflected each sub-factor in the ICC model, such as knowledge, skills, attitudes, internal outcomes, and external outcomes of ICC. Another question

solicited suggestions for more strategies that might help those teaching NNS graduate students. In addition, reviewers were asked for recommendations for preparing the instructions for participants completing the survey. Because these experts had many experiences working with NNS students, they were asked whether the questions clearly explained and described the sub-factors or concepts in both Part 2 and Part 3. Both types of experts were asked for their overall thoughts about this survey instrument.

Regarding the questions mentioned above, each expert provided valuable comments and suggestions to improve the structure and content of the survey instrument. One of the experts in the instructional design area expressed a concern about the clear connection between ICC related survey questions and instructional design. Also, one of the experts in the foreign language and international education field had a concern about "how responses on the survey are linked to the ICC model." Such comments made by the experts gave the researcher good insight and direction for the analysis of data and discussion of results. Therefore, these issues and concerns are highlighted in the results and discussion in the next chapters. Except for the concerns just mentioned, the experts agreed that the survey items were well developed and reflected the model of each concept, incorporating the previous literature and theoretical background.

The detailed suggestions made by each expert were summarized as a checklist to guide the revision and follow up. Throughout the expert review process, the earlier version of the survey was significantly improved in terms of its clearness and the comprehensiveness of the survey questions. Specific changes to the instrument based on the comments of the expert reviewers are described below.

First, in regard to the structure of the survey, experts suggested moving the background information from its original location to the beginning of the survey, and this was changed

accordingly. In *Part 1 – Background Information*, one expert in the foreign language and educational field pointed out that some participants, such as African or Indian students, may have more than one native language. Consequently, one item asking "do you have more than one native language" was included in the section and the item asking respondents to indicate their native language was changed to request that they indicate all their native language(s).

Second, in regard to the *clearness* and *accuracy* of the survey contents, several items were included, excluded, or divided into separate questions. Two experts pointed out the issue of duality in an item. For example, the question, "I can learn more effectively with structured guidelines rather than being allowed a wide range of autonomy" needed to be divided into two separate questions because it addressed two different strategies in socially engaged learning. To make the item clear, the researcher deleted the phrase "rather than being allowed a wide range of autonomy" and changed "structured guidelines" to "greater structure (e.g., step by step guidance)". The final item became "I can learn more effectively with greater structure (e.g., step by step guidance provided by the instructor)." One expert suggested the addition of an important instructional strategy for NNS graduate students that the previous version did not contain: "I can learn more effectively when I get immediate feedback from my instructor." This item was included in the final survey instrument.

Unclear expressions and jargon terms were replaced with words that could be easily understood by NNS students. For example, one item, "withhold judgment about culturally different people" was changed to "not judge people because they are from a different culture." Another example of this was "tolerate ambiguity that is raised when I interact with culturally different people" which was changed into "accept that there are times that I may not always

understand differences between cultures." In addition to the items mentioned here, several items were rephrased and improved significantly as clearer and simpler sentences.

Third, the title and instructions that introduced the survey were rewritten using easy and short words. One expert doubted whether NNS students would understand the word "competence," and pointed out that survey participants did not need to know about the term "socially engaged learning." Thus, although this survey was about "perceptions on intercultural communicative competences and instructional design strategies for socially engaged learning," the title was changed to refer to "intercultural communication and effective instructional strategies." The expert also suggested making the learning situation clear and specific within a wide range of contexts including informal settings to formal settings, and classroom settings to individual learning settings. In consideration of this suggestion, the researcher decided to focus the survey on the class situations that graduate students may experience. As a result, the instructional message that guides Part 3 was rephrased to, "The following questions will ask about the effectiveness of instructional strategies that you have experienced in your classes as a graduate student." In case students have not experienced specific instructional strategies indicated in the items, one expert suggested including "N/A" as a response option with the Likert scale.

Lastly, the scale of the survey instrument was also changed through the expert review process. The previous version of the scale for Part 2 included "0 – no competence, 1 - very low competence, 2- low competence, 3- high competence, 4- very high competence, 5 - full competence." This was changed to "0-strongly disagree, 1-disagree, 2-slightly disagree, 3-slightly agree, 4- agree, 5- strongly agree" because the terms low or high competence were not clear as a scale. Also, the previous version of the scale for Part 3, which included "0-does not

matter to me… 5 - very important to me," was changed to the same type as Part 2 so that the scales became consistent throughout the entire instrument.

Pilot Test

In order to test the effectiveness of the survey instruments (Fraenkel & Wallen, 2006), the researcher conducted pilot tests with sixteen participants who were part of the target population of Virginia Tech NNS graduate students. The pilot tests for this study were conducted consecutively with paper-based surveys and a web-based survey tool. As the first pilot test, eight NNS graduate students participated with the early version of the paper-based survey instrument which was the same one utilized for expert review. The detailed suggestions made by each pilot tester were summarized as a checklist to guide follow up of comments and feedback.

The first pilot test was conducted from February 8 to 10, 2010. During the pilot test, the researcher collected not only the completed questionnaire, but also participants' feedback on ease and clarity of questions. For the first pilot test, the researcher distributed the paper-based survey to participants and received it back from them with verbal feedback and written marks on the paper. Several testers asked about including an "other" response option in the question about their marital status for those who were divorced or in a relationship. Also, in regard to the degree of respondents, one tester pointed out that the question about the respondent's degree was confusing. It was not clear whether the question referred to the degree that they were pursuing or the degree that they had already earned. Thus, the item was changed to specify the "degree that you are pursuing currently." Several unclear expressions, grammatical errors, and inconsistent use of pronouns were corrected. For example, "autonomy," "ambiguity," "competence," "unique signs and languages," "mutual engagement," and "target culture" were addressed as difficult

words to understand. Items were revised to simpler and more direct sentences so that respondents did not have to think much about the meaning of the questions.

The second pilot test was conducted during February 12 to 14, 2010 after the web-based survey was developed based on the revisions resulting from the expert review and the first pilot test. Virginia Tech's "survey.vt.edu," which is freely available to the university's faculty and students, was utilized to set up the present study's web-based survey. In addition, the filebox utility that Virginia Tech provides to every student was used to develop a web page to carry the informed consent form which included a button to link to the web-based survey. The second pilot test sought to evaluate the online distribution method as well as the survey content itself. An invitation letter and a link to the informed consent form was e-mailed to eight NNS graduate students who did not participate in the first pilot test. Students in the test group represented different colleges, including Liberal Arts and Human Sciences, Engineering, and Architecture and Urban Studies. The researcher asked the second group of pilot testers to give feedback on (1) how long this survey took to complete, (2) any items or wording that were hard to understand, and (3) technical or editorial difficulties with filling out the survey.

Some of the participants in the second pilot test mentioned that the invitation letter for the survey was somewhat long. They suggested inserting the link for the survey at the beginning of the e-mail invitation to shorten the time needed to access the online survey instrument. One of the testers provided several useful suggestions including allowing more spaces between lines for high readability, making the questions more polite and less direct, and explaining the meaning of intercultural experiences with examples. The researcher made changes in accordance with these suggestions. Several participants pointed out the ambiguity in terms such as "significant level" or "intercultural experiences." In response to this concern, the item which asked, "prior to coming

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to the U.S., did you have any significant intercultural experience outside of your country?" was supplemented by an additional explanation, "travelling more than one month, living outside of your country, communicating with foreign friends relatively for long period, etc."

It was not possible to implement all of the good suggestions received from the second pilot test. For example, one tester suggested providing the survey instrument in several different languages or allowing the respondents to fill out the open-ended questions in their own languages. The researcher deliberated this suggestion, but decided not to follow it because the target population represented more than forty native languages, and some of these languages were only spoken by one or two potential participants. It would not have been fair to provide the survey in the languages of some potential participants but not others.

Lastly, some typographical errors that occurred in the process of developing the web-based version were corrected during the second pilot test. Most participants responded that the survey took around 15 minutes to complete, and they had positive comments about this research and the survey instrument. The final version of the survey (see Appendix A) was developed through multiple revisions based on the expert reviews and two pilot tests. Taking the advice of one of the experts, this researcher used the concept of member checks by re-contacting some of the pilot test participants to find out whether or not the problems or issues raised by the participants had been well resolved. Although member checking is a technique often used in qualitative research, it was also useful in this quantitative research to ensure the effectiveness of the survey instrument. This instrument eventually was distributed to culturally and linguistically diverse participants, dealt with several unfamiliar concepts, and required multiple revisions for clarity.

Reliability Test

Evaluation of the consistency and stability of the instrument was necessary to ensure the reliability of future use of the instrument. Using the results of the pilot tests, the researcher calculated Cronbach's alpha, a measure of inter-item consistency. Values of Cronbach's alpha range from 0 to 1.0, with a high score indicating that the items taken together to form the instrument are reliable. From the 16 participants in the pilot tests, reliability coefficients for Part 2 – *Intercultural communicative competence* and Part 3- *Instructional strategies for socially engaged learning* were calculated as .912 and .605, respectively. After data were collected from 213 participants, reliability was calculated again. The final Cronbach's alpha coefficients for Part 2 and Part 3 were .853 and .817, respectively.

Data Collection

Because the research involved human subjects, this study was approved by the Virginia Tech Institutional Review Board (IRB #10-077) prior to data collection (see Appendix D). In the IRB research protocol and the text of the informed consent form, the researcher indicated that the participants were free to choose whether or not to participate in the study, there was no compensation for the students, and responses were confidential and anonymous. Also, the participants were instructed to read the informed consent form before filling out the survey as required by the IRB. The consent form indicated that participants were free not to answer any questions that they did not want to answer; and they were free to end the survey at any time (see Appendix E).

The final version of the web-based survey instrument was delivered by e-mail with an invitation letter describing the purpose of the research, the criteria for participation, the estimated time to fill out the questionnaire, information about confidentiality and anonymity, a link to the

web site containing the informed consent form, and a link to the web-based survey instrument. Monica Gibson, the director of student services for the Virginia Tech Graduate School, distributed the survey invitation to the target population by way of a listserv of international graduate students (INTL_GRAD@LISTSERV.vt.edu) (see Appendix F). Messages sent through this listserv were received by 1,636 international graduate students who were enrolled in spring 2010.

The first e-mail invitation was sent out on February 23, 2010 at 5:01 pm with the subject "Opportunities for international graduate students." On that date, about 30 respondents participated. However, the response rate quickly dropped and other efforts were made to encourage participation. The researcher sent out a reminder e-mail to international graduate students and used a variation of the snowball sampling method. That is, the researcher contacted international graduate students who met the criteria of the target population and asked them to distribute the reminder e-mail to other international graduate students with whom they were acquainted. This method was effective in increasing the response rate and a total of 147 responses were collected during the first period of data collection.

A second reminder was sent to the original 1,636 students through the INTL_GRAD listserv on March 8, 2010 at 5:04 pm. The deadline for the survey was extended to March 10, 2010. Following the last reminder e-mail, 66 additional students participated in the survey, which brought the final total of responses to 213. As a result, the response rate was calculated as13.01%. The total responses for this study exceeded 100 cases, which Fraenkel and Wallen (2006) indicated as the minimum sample size for descriptive statistics.

Data Analysis

After data collection was complete, quantitative data analysis was conducted. First, the

quantitative data from closed-ended questions were put into Microsoft Excel 2007 and the

statistical program, PASW Statistics version 18.0. The background information was used to

identify the demographic distribution of the survey respondents with frequencies and

percentages. The major analyses of this study were descriptive statistics to measure the

perception of NNS graduate students about intercultural communicative competence and

effective instructional design strategies for socially engaged learning. These statistics included

measures of central tendency, such as the mean and standard deviation (SD) of each item score

and the sum of items in the subcategories. In addition, t-tests and ANOVAs were used to detect

significant differences between two or more group means. These inferential statistics helped

check whether differences in perceptions of NNS graduate students existed among students with

different demographic backgrounds, academic disciplines, cultural origins, and previous

experience. Finally, the open-ended questions were analyzed to identify two issues: (1) other

intercultural communicative competences that were not included in Part 2 of the survey, and (2)

other instructional strategies that were not included in the items in Part 3.

Research Limitations

This study is limited to NNS graduate students in the context of a single institution,

Virginia Tech. That is, this study cannot be generalized to the situations of other universities.

Also, in regard to sampling for data collection, this study did not use a random sampling method.

Therefore, the results of the research also are limited in generalizing to the target population, all

Virginia Tech NNS graduate students. This study did not use a proportional sampling method to

ensure that the distribution of the sample would match the distribution of the target population

based on demographic details such as gender, degree, nationality, native language(s), and college

or major. As a result, the collected data do not represent fully the distribution of the target

population. Since this study also utilized the researcher's personal social networking and

snowball sampling method to increase the response rate, the sample included a higher proportion

of students who were the same nationality as the researcher or who were in the same program.

Lastly, this study relied on the perceptions of NNS graduate students. This self-report method

has limitations in measuring accurate Competences and perceptions of respondents.

Chapter 4: Results

In Chapter 3, details of the general research design, research setting, target population, instrument, considerations for research quality, data collection and analysis methods, and research limitations were articulated. While Chapter 3 presented the research methodology used in this study, Chapter 4 focuses on the results of the collected and analyzed data. This chapter presents (1) the background characteristics of research participants, (2) the perceived intercultural communicative competences, and (3) the perceived effectiveness of instructional strategies for socially engaged learning.

Research Participants

The participants involved in this study were 213 international graduate students enrolled in Virginia Tech graduate programs during the spring of 2010. Five responses were not included in the final analysis because of incomplete surveys. Even though participants were informed that the survey was confidential and anonymous, one respondent was concerned about the items about personal background. The respondent stated, "This survey requires too much personal information," and did not finish the rest of the questionnaire. It is assumed that the respondent believed that the researcher could easily determine his or her identity through the requested personal information such as gender, degree, major, nationality, and native language. When the five incomplete responses were excluded, the data for analysis consisted of a total of 208 responses out of 1,636 international graduate students. Therefore, the final response rate was recalculated as 12.71%.

Background Characteristics

This section presents the background characteristics of survey participants. Of the 208 respondents, 131 (63%) were male and 77 (37%) were female. Over half of the students were

single (53.8%, n =112) and most of the others were married (44.2%, n=92). Two respondents

(1%) selected "other" as their marital status, stating "in relationship," and two (1%) did not

answer this item. In regard to the age distribution, the largest number of participants were in the

20 to 29 range (47.1%, n=98) or the 30 to 39 range (47.1%, n=98). Few students were in the 40

to 49 age group (3.4%, n=7) or the 50 to 59 group (1.5%, n=3). Table 5 shows the distributions

of the demographic information of survey participants.

Table 5
Demographic Information of Survey Participants

Demographic Information	Students in the Sample	Valid Percent
Gender		
Male	131	63.0
Female	77	37.0
Marital Status		
Single	112	53.8
Married	92	44.2
Others	2	1.0
No response	2	1.0
Age		
20 to 29	98	47.1
30 to 39	98	47.1
40 to 49	7	3.4
50 to 59	3	1.5
No response	2	0.9

The majority of respondents were doctoral students (78.8%, n=164) and the rest who

answered this item were master students (20.2%, n=42). Table 6 shows the distribution of the

academic disciplines of the survey participants. The largest group represented the college of

engineering (40.4%, n=84), followed by the college of science (16.3%, n=34), the college of

liberal arts and human sciences (13.5%, n=28), and the college of natural resources (6.7%,

n=14). The college of agricultural and life science and the college of business each had the same

number of participants (each 5.8%, n=12). The remaining participants represented architecture and urban studies (5.3%, n=11), veterinary medicine (3.4%, n=7), and inter college (2.9%, n=6).

Participants listed 44 different majors, which are also shown in Table 6. The largest group were in electrical and computer engineering (13.5%, n=28), followed by curriculum and instruction (10.1%, n= 21), computer science (6.3%, n=13), mechanical engineering (4.8%, n=10), public and international affairs (4.3%, n=9), industrial and systems engineering (4.3%, n=9), civil and environmental engineering (3.8%, n=8), economics (3.4%, n=7), wood science and forest products (2.9%, n=6), geosciences (2.9%, n=6), biomedical and veterinary sciences (2.9%, n=6), and macromolecular science and engineering (2.4%, n=5). The remaining majors (35.1%, n=73) were represented by fewer than five students each. Although seven participants did not specify a major, this distribution demonstrates the diversity in academic backgrounds within the sample.

The large proportion of students from the college of engineering was not a unique phenomenon in the sample for this study. The distribution of participants' colleges was similar to that of the target population and of all graduate students at Virginia Tech. Table 7 allows comparison of the college distributions of the sample participants, all graduate students, and all international graduate students.

Table 6

Academic Discipline Background of Survey Participants

Academic Discipline Background	Frequency	Percent
Degree		
Doctoral	164	78.8
Masters	42	20.2
Unspecified	2	1.0
College		
Engineering	84	40.4
Science	34	16.3
Liberal Arts and Human Sciences	28	13.5
Natural Resources	14	6.7
Agricultural and Life Science	12	5.8
Business	12	5.8
Architecture and Urban Studies	11	5.3
Veterinary Medicine	7	3.4
Inter College	6	2.9
Major		
Electrical and Computer Engineering	28	13.5
Curriculum and Instruction	21	10.1
Computer Science	13	6.3
Mechanical Engineering	10	4.8
Public and International Affairs	9	4.3
Industrial and Systems Engineering	9	4.3
Civil and Environmental Engineering	8	3.8
Economics	7	3.4
Wood Science and Forest Products	6	2.9
Geosciences	6	2.9
Biomedical and Veterinary Sciences	6	2.9
Macromolecular Science and Engineering	5	2.4
Others*	73	35.1
Unspecified	7	3.3

Note. Other majors include Hospitality and Tourism management, Management, Biomedical, Engineering and Sciences, Geography, Chemistry, Agricultural and Applied Economics, Animal & Poultry Sciences, Engineering Science and Mechanics, Psychology, Forestry, Biological Sciences, Physics, Mathematics, Food Science and Technology, Plant Pathology, Physiology, and Weed Science, Architecture + Design, Business Information Technology, Aerospace and Ocean Engineering, Chemical Engineering, Career and Technical Education, Science & Technology in Society, Statistics, Biological Systems Engineering, Rural Economic Analysis, Finance, Insurance, and Business Law, Biological Systems Engineering, Mining and Minerals Engineering, Myers-Lawson School of Construction, Engineering Education, Educational Research and Evaluation, Communication, Fisheries and Wildlife Sciences, and Genetics, Bioinformatics, and Computational Biology.

Table 7

College Proportion Comparison of Survey Participants with the Target Population

College	All Graduate students		International Graduate Students (Population)		International Graduate Students (Sample)	
	n	%	n	%	n	%
Engineering	1,693	37	881	54	84	40
Science	590	13	252	15	34	16
Liberal Arts and Human Sciences	781	17	71	4	28	14
Natural Resources	160	4	42	3	14	7
Agricultural and Life Science	342	8	97	6	12	6
Business	294	6	120	7	12	6
Architecture and Urban Studies	333	7	68	4	11	5
Veterinary Medicine	88	2	27	2	7	3
Inter College	274	6	86	5	6	3

Survey participants were diverse in their cultural origins, as shown in Table 8. Of the respondents who answered this question, the three largest groups were from the nations of South Korea (26.5%, n=55), China (22.6%, n=47), and India (14.4%, n=30). After these nations, smaller numbers of participants came from Iran (4.3%, n=9), Turkey (1.9%, n=4), Vietnam (1.44%, n=3), Brazil (1.44%, n=3), Greece (1.44%, n=3), and Chile (1.44%, n=3). The remaining 48 responses (23.1%) were 35 nations represented by one or two students each.

As also shown in Table 8, 38 students (18.3%) had more than one native language. Students with multiple native languages came from India, Persia, Malawi, South Africa, Pakistan, Zambia, Tunisia, Kenya, and Switzerland, and five of these students listed three or more native languages. The most prevalent native languages were Korean (n=57), Chinese (n=46), and Hindi (n=20). Spanish ranked fourth (n=12) and Persian was fifth (n=9). Other languages with at least four native speakers were Malayalam, Punjabi, Turkish, Arabic, Bengali, Telugu, Marathi, and Urdu. The remaining 37 listed languages were relatively uncommon, with an average of fewer than two native speakers per language.

Table 8

Cultural Origins of Survey Participants

Cultural Origins		Frequency	Percent
Nationality	South Korea	55	26.5
	China	47	22.6
	India	30	14.4
	Iran	9	4.3
	Turkey	4	1.9
	Vietnam	3	1.44
	Brazil	3	1.44
	Greece	3	1.44
	Chile	3	1.44
	Others[1]	48	23.1
	No answer	3	1.44
Do you have more than one native language?			
	No	170	81.7
	Yes	38	18.3
Native Language(s)			
(n=242)	Korean	57	23.5
	Chinese	46	19.0
	Hindi	20	8.2
	Spanish	12	5.0
	Persian (Farsi)	9	3.7
	Malayalam	5	2.0
	Punjabi	5	2.0
	Turkish	4	1.7
	Arabic	4	1.7
	Bengali	4	1.7
	Portuguese	4	1.7
	Telugu	4	1.7
	Marathi	4	1.7
	Urdu	4	1.7
	Others[2]	51	21.0
	Language not listed	9	3.7

Note. [1] Other nations include Malawi, South Africa, Colombia, Peru, Taiwan, Pakistan, Honduras, Zambia, Spain, Ghana, Bangladesh, Saudi Arabia, Nepal, Mexico, Kenya, Portugal, Bulgaria, Switzerland, Macedonia, Costa Rica, Philippines, Nigeria, Tunisia, Iceland, Libya, Croatia, Canada, Egypt, Hungary, Thailand, Poland, Sri Lanka, Russia, and France.
[2] Other native languages include Vietnamese, Greek, French, Tamil, Chichewa, Nepali, Kannada, Fanti, Twi, Bemba, Bulgarian, German, Macedonian, Swahili, Thai, Polish, Kashmiri, Maithili, Marwari, Afrikaans, Sepedi, Xhosa, Chitumbuka, Croatian, Azerbaijani, Gujarati, Hungarian, Icelandic, Indonesian, Kaonde, Setswana, Sinhala, Tumbuka, Nyanja, Yoruba, Luo, and Russian.

The distribution of the larger nationality groups in the sample, including China, India, South Korea, and Iran, was similar to the nationality distribution in the target population of Virginia Tech international graduate students. Table 9 shows a comparison of the distribution of nationalities between the target population, as represented by enrollment figures for fall 2009 (the last semester for which complete data were available), and the survey sample.

Table 9

Nationality Proportion Comparison of Survey Participants with the Target Population

Nationality	International Graduate Students (Population)		International Graduate Students (Sample)	
	n	%	n	%
Total	1692	100	208	100
India	572	33.81	30	14.4
China	419	24.76	47	22.6
South Korea	130	7.68	55	26.5
Iran	57	3.37	9	4.3
Other nations	514	30.38	64	30.8
No response			3	1.4

A majority of sample members had previous job experience (64.4%, n=134). Of these, 40.3% (n=54) had 3 years or less experience working in their field of study, 30.6% (n=41) had 3-6 years of experience, 14.2% (n=19) had worked for 6-9 years, and 8.2% (n=11) had 9-12 years of experience. The smallest proportion of students with relevant work experience had 12-15 years (1.5%, n=2), but a larger number of students had more than 15 years (4.5%, n=6).

In regard to how long they had been in the U.S., the most frequent response was more than 5 years (27.4%, n=57). Thirty-three students reported being in the U.S. for less than 1 year (15.9%), 43 (20.7%) were present for 1-2 years, 33 (15.9%) for 2-3 years, 21 (10.1%) for 3-4

years, and 20 (9.6%) for 4-5 years. Table 10 shows a summary of findings for previous work

experience and years living in the U.S.

Table 10
Previous Job Experiences and Years of Living in U.S.

Previous Experiences		Students in the Sample	Valid Percent
Previous job experience			
N=208	Yes	134	64.4
	No	74	35.6
Years of working experience	0-3 years	54	40.3
N=134	3-6 years	41	30.6
	6-9 years	19	14.2
	9-12 years	11	8.2
	12-15 years	2	1.5
	More than 15 years	6	4.5
	No answer	1	0.7
Years of living in U.S.			
N=208	less than 1 year	33	15.9
	1-2 years	43	20.7
	2-3 years	33	15.9
	3-4 years	21	10.1
	4-5 years	20	9.6
	More than 5 years	57	27.4
	No answer	1	0.4

Most respondents indicated that they had English language preparation prior to coming to

the U.S. (96.6%, n=200). More than half of the students (54.8%, n=114) said they had no

previous experience with intercultural situations, and the remaining 45.2% (n=94) indicated they

had such prior intercultural experiences. In the wording of this question, the term intercultural

experience was defined as traveling abroad for more than one month, living outside of their

country, communicating with foreign friends relatively for long period, or similar experiences. In

response to a question about the location and length of previous intercultural experiences, a large

number of respondents (39.4%, n=82) provided relatively specific and detailed information.

Participants reported living, traveling, working, or studying in the U.S., Europe, Japan, and

Canada, among other places. Purposes for visiting other cultures included achievement of a

degree, participating in a student exchange program, and language learning. The durations of

these experiences ranged from 6 weeks to 15 years. In addition to their experiences visiting other

countries, six participants mentioned communicating with foreign friends in their working

environment, college life, or personal relationships, while they were in their home countries.

Table 11
Previous Language Preparation and Intercultural Experience

Intercultural Experiences		Frequency	Percent
English language education			
	Yes	200	96.1
	No	7	3.4
	No response	1	0.5
Intercultural experiences			
	Yes	94	45.2
	No	114	54.8
Places of intercultural experiences			
N=82	U.S	18	22.0
	Europe	7	8.5
	Japan	5	6.1
	Canada	5	6.1
	Others	47	57.3
Duration of intercultural experiences			
	more than 6 years	9	11.0
N=82	3-6 years	8	9.8
	2-3 years	12	14.6
	1-2 years	14	17.1
	6-12 months	10	12.2
	2-6 months	17	20.7
	less than 2 months	12	14.6

Intercultural Communicative Competences

This section presents the results of the first research question: what are the perceptions of NNS graduate students in regard to their intercultural communicative competence (ICC)? To answer this question, responses to the second part of the survey were analyzed to determine the level of ICC perceived by NNS graduate students who participated in the study. The ICC scale was composed of 20 items that measured five categories: (1) attitude, (2) skills, (3) awareness/knowledge, (4) adaptability/flexibility, and (5) effective and appropriate communication. Results will be presented on the overall level of ICC followed by a breakdown by the five sub-categories. This section will also provide comparisons of perceived ICC levels for different participants based on background characteristics.

Overall ICC Levels of NNS Graduate Students

The ICC level is a composite scale score obtained by averaging the 20 ICC item scores on the survey instrument. As shown in Table 12, participants perceived themselves as having a *moderately high* level of ICC (Mean=3.84, SD=0.46). This self-reported scale was measured on a six-point Likert scale ranging from 0 = lowest competence to 5 = highest competence. Interestingly, in the sub-factors' ICC levels, the average of attitude (Mean=4.23, SD=0.51) was higher than any other element, including skills (Mean=3.66, SD=0.79) and awareness/knowledge (Mean=3.80, SD=0.79).

At the individual level, this result implies that NNS graduate students tend to have higher levels of competence in their attitudes, but they are relatively less competent in knowledge and skills for intercultural communication. In the interactional aspect of ICC, participants revealed higher competence for internal outcomes (Mean=3.83, SD=0.63) than for external outcomes (Mean=3.70, SD=207).

Table 12
ICC level perceived by NNS Graduate Participants

	Factors	Mean	SD	N
Overall		3.84	0.46	208
Individual Aspect	Attitude	4.23	0.51	208
	Skills	3.66	0.79	208
	Awareness/Knowledge	3.80	0.64	207
Interactional Aspect	Internal Outcome	3.83	0.63	205
	External Outcome	3.70	0.66	207

Perceived ICC Levels from Five Factors

Table 13 shows each factor of ICC broken down into sub-factors with their composite

scores. The score for respect and openness (Mean=4.48, SD=0.59) was found to be higher than

for curiosity and discovery (Mean=3.97, SD=0.71). Acquisitive skills (Mean=3.93, SD=0.79)

has a higher mean than applicative skills (Mean=3.38, SD=0.93). The score for cultural

knowledge (Mean=3.49, SD=0.76) was lower than for sociolinguistic knowledge (Mean=4.11,

SD=0.71). The effective communication score (Mean=3.57, SD=0.81) was lower than the mean

score for appropriate communication (Mean=3.98, SD=0.78).

Table 13
Five Factors of ICC Perceived by NNS Graduate Participants

	Factors	Mean	SD	N
Attitude				
	Respect & Openness	4.48	0.59	208
	Curiosity & Discovery	3.97	0.71	207
Skills				
	Acquisitive [input]	3.93	0.79	208
	Applicative [output]	3.38	0.93	208
Awareness / Knowledge				
	Cultural knowledge	3.49	0.76	207
	Sociolinguistic knowledge	4.11	0.71	206
Internal Outcomes				
	Adaptability	3.65	0.70	205
	Flexibility	4.01	0.70	205
External Outcomes				
	Effective communication	3.57	0.81	207
	Appropriate communication	3.98	0.78	206

Attitude. Table 14 provides a summary of the responses on attitude related items. More than half of the participants (63.9%, n=133) strongly agreed that they try to respect people from different cultures (Mean=4.61, SD=0.56). About half of the participants (50.7%, n=105) strongly agreed that they try not to judge people because of a different culture (Mean=4.36, SD=0.81). On the other hand, 45.6% of survey participants (n=94 merely agreed that they tried to accept that sometimes they would not understand differences between cultures (Mean=4.21, SD=0.85). The majority of respondents agreed (39.1%, n=81) or slightly agreed (27.1%, n=56) that they looked for opportunities to interact with culturally different people (Mean=3.73, SD=1.06).

Table 14
Attitude Perceived by NNS Graduate Participants

Attitude	Frequency (unit=n, %)[1,2]						M	SD	N
(I am trying to)	0	1	2	3	4	5			
Respect & Openness									
1. respect people from different cultures including their language, values, history and traditions.			1 *0.5*	5 *2.4*	69 *33.2*	133 *63.9*	4.61	0.56	208
2. not judge people because they are from a different culture.	1 *0.5*	1 *0.5*	3 *1.4*	18 *8.7*	79 *38.2*	105 *50.7*	4.36	0.81	207
Curiosity & Discovery									
3. accept that there are some times that I may not always understand differences between cultures.	1 *0.5*	2 *1*	5 *2.4*	20 *9.7*	94 *45.6*	84 *40.8*	4.21	0.85	206
4. look for opportunities to interact with culturally different people.	2 *1*	8 *3.9*	9 *4.3*	56 *27.1*	81 *39.1*	51 *24.6*	3.73	1.06	207

Note. 1) The above number on the frequency column indicates the number of students, and the below number with italic style indicates the valid percentage.

   2) The frequency was counted based on 6-point Likert scale indicating: 0=strongly disagree, 1=disagree, 2=slightly disagree, 3=slightly agree, 4=agree, and 5=strongly agree.

Skills. Table 15 shows the results of responses on skill related items. More than half of the respondents (51.5%, n=106) agreed that they recognized cultural differences (Mean=4.15, SD=0.72). For the item about listening and reading skills in English, participants revealed broad

agreement (Mean=3.72, SD=1.21), with 38.5% indicating they agreed that they were able to

listen to long speeches and read articles in English without much effort or difficulty. For the

same item, 27.9% expressed strong agreement, 20.2% slight agreement, 7.7% slight

disagreement, 2.4% disagreement, and 3.4% strong disagreement. In regard to applicative skill, a

large proportion of respondents (44%, n=91) slightly agreed that they could interpret different

signs (e.g., gestures, visual marks) or language (e.g., local expressions or phrases) from different

cultures (Mean=3.16, SD=0.9). There was a broad distribution of responses for the item on

English speaking and writing skills in the area of study, with 24.4% indicating strong agreement,

37.6% agreement, 21% slight agreement, 10.7% slight disagreement, 5.4% disagreement, and 1%

strong disagreement.

Table 15
Skills Perceived by NNS Graduate Participants

Skills	Frequency (unit=n, %)						M	SD	N
(I am able to…)	0	1	2	3	4	5			
Acquisitive Skill: Input									
5. recognize cultural differences between my own and other cultures.			4 *1.9*	29 *14.1*	106 *51.5*	67 *32.5*	4.15	0.72	206
6. listen to long speech and read articles in English without difficulties.	7 *3.4*	5 *2.4*	16 *7.7*	42 *20.2*	80 *38.5*	58 *27.9*	3.72	1.21	208
Applicative Skill: Output									
7. interpret different signs or languages from different cultures.		17 *8.2*	22 *10.6*	91 *44*	64 *30.9*	13 *6.3*	3.16	0.99	207
8. speak and write subjects related to my area of study in English without difficulties.	2 *1*	11 *5.4*	22 *10.7*	43 *21*	77 *37.6*	50 *24.4*	3.62	1.18	205

Awareness and knowledge. Table 16 provides the results of responses on awareness or knowledge related items. For the item about awareness of others' cultural characteristics, 41.5% expressed slight agreement, 36.1% agreement, and 8.3% strong agreement (Mean=3.36, SD=0.89). Compared to other items, a relatively large number of students expressed slight disagreement (11.2%, n=23) or disagreement (2.9%, n=6) for this item. On the other hand, participants revealed a higher awareness or knowledge of important historical and socio-political factors that have shaped the relationships of their own countries with other countries (Mean=3.62, SD=.85). For this item, 48.3% agreed, 30.7% slightly agreed, 12.2% strongly agreed, 7.3% slightly disagreed, and 1.5% disagreed. In regard to sociolinguistic knowledge, most participants asserted that they understood the value of cultural diversity, with 44.6% indicating strong agreement, 43.6% agreement, and 9.8 % slight agreement (Mean=4.30, SD=0.75). Also, a large proportion of students indicated awareness of the social characteristics of language, as 46.8% agreed, 26.8% strongly agreed, and 4.4% slightly agreed with the item (Mean=3.93, SD=0.88).

Table 16
Awareness and Knowledge Perceived by NNS Graduate Participants

Awareness/Knowledge (I am aware of ... or I understand ...)	Frequency (unit =n, %)						M	SD	N
	0	1	2	3	4	5			
Cultural knowledge									
9. other's cultural characteristics (e.g., worldview, norms, customs, taboos, greetings, etc.)	6	23	85	74	17		3.36	0.89	205
	2.9	*11.2*	***41.5***	*36.1*	*8.3*				
10. the important history and socio-political factors that have shaped the relationship of my own and other countries	3	15	63	99	25		3.62	0.85	205
	1.5	*7.3*	*30.7*	***48.3***	*12.2*				
Sociolinguistic knowledge		1	3	20	89	91	4.30	0.75	204
11. the value of cultural diversity		*0.5*	*1.5*	*9.8*	*43.6*	***44.6***			
12. the social characteristics of language.		3	9	42	96	55	3.93	0.88	205
		1.5	*4.4*	*20.5*	***46.8***	*26.8*			

Internal outcomes. Table 17 displays the results of responses to the adaptability and flexibility related items. More than half of the respondents (52.7%, n=107) indicated agreement that they were able to use appropriate strategies for adjusting to the new cultural environment (Mean=3.77, SD=0.79). Similarly, a large proportion of respondents (45.3%, n=82) agreed that they were able to change their own behavior to relate to what they learned about a new culture (Mean=3.53, SD=.88). For both of these adaptability items, the vast majority of responses fell between slight agreement and strong agreement. Responses to the items on flexibility were similar to adaptability, though they had slightly higher means. Over half of the respondents (52.2%, n=107) agreed that they considered others' feelings, emotions, situations, or thoughts and used this consideration for effective communication (Mean=4.04, SD=0.78). Also, 53.2% agreed, 24.1% strongly agreed, and 18.2% slightly agreed that they reflected upon their interaction with others and used the reflection for future communication and interactions (Mean=3.97, SD=0.78).

Table 17

Adaptability and Flexibility perceived by NNS Graduate Participants

Internal Outcome	Frequency (unit=n, %)						M	SD	N
(I am able to...)	0	1	2	3	4	5			
Adaptability									
13. use appropriate strategies for adjusting to the new cultural environment.		1	11	53	107	31	3.77	0.79	203
		0.5	*5.4*	*26.1*	***52.7***	*15.3*			
14. change my own behavior to relate to what I learn about new culture.	2	2	15	72	82	20	3.53	0.88	203
	1	*1*	*7.4*	*35.5*	***45.3***	*9.9*			
Flexibility									
15. consider other's feeling, emotion, situation, or thoughts and use the consideration for effective communication.		1	*6*	*34*	*107*	57	4.04	0.78	205
		0.5	*2.9*	*16.6*	***52.2***	*27.8*			
16. reflect upon my interaction with others and use the reflection for future communication and interactions.			9	37	108	49	3.97	0.78	203
			4.4	*18.2*	***53.2***	*24.1*			

External outcomes. Table 18 provides the results of responses on items related to

communication. In regard to effective communication, more than half of respondents (52.4%,

n=108) indicated agreement that they were able to achieve their goals by communicating

effectively with culturally different people (Mean=3.65, SD=0.85). A large proportion of

respondents (48.1%, n=99) agreed that they were able to solve problems effectively when

miscommunication or misunderstanding occurred (Mean=3.49, SD=0.93). Most of the responses

to these two items ranged from slight agreement to agreement. In comparison, the two items on

appropriate communication drew more responses of strong agreement. For the item on being able

to avoid violating important rules in a particular culture, 31.3% strongly agreed, 46.8% agreed,

and 13.9% slightly agreed (Mean=3.95, SD=0.90). Most respondents expressed some level of

agreement that they could interact appropriately in a variety of situations within the new

environment, as 25.5% strongly agreed, 52.2% agreed, and 15.8% slightly agreed (Mean=3.95,

SD=0.90).

Table 18
Communication Ability Perceived by NNS Graduate Participants

External Outcome	Frequency (unit=n, %)						M	SD	N
(I am able to …)	0	1	2	3	4	5			
Effective communication									
17. achieve my goals by communicating effectively with culturally different people.		4 *1.9*	15 *7.3*	55 *26.7*	108 *52.4*	24 *11.7*	3.65	0.85	206
18. solve problems effectively when miscommunication or misunderstanding occurs.		7 *3.4*	22 *10.7*	59 *28.6*	99 *48.1*	19 *9.2*	3.49	0.93	206
Appropriate communication									
19. avoid violating important rules in the particular culture.	1 *0.5*	4 *2*	11 *5.5*	28 *13.9*	94 *46.8*	63 *31.3*	3.99	0.97	201
20. interact appropriately in a variety of situations within the new culture.	2 *1*	1 *0.5*	10 *4.9*	32 *15.8*	106 *52.2*	52 *25.6*	3.95	0.90	203

Group Differences in ICC Levels of NNS Graduate Students

This section presents the results of analysis of group differences in ICC levels across participants' background characteristics. The levels of ICC and its sub-factors were analyzed across (1) demographic backgrounds, (2) academic discipline backgrounds, (3) cultural origins, and (4) previous experiences. Significance of observed differences between groups was assessed by the use of t-test and analysis of variance (ANOVA) procedures.

Demographic backgrounds. As shown in Table 19, although the mean perceived ICC level for female participants (3.90, SD=0.45) was higher than that of male participants (3.81, SD=0.45), the difference between genders was not significant (t=-1.36, *p* >.05). Grouping by marital status also returned a non-significant result (t=-1.52, *p* >.05), with single students (Mean=3.89, SD=0.48) having a slightly higher perceived ICC level than married students (Mean=3.79, SD=0.44). When three age groups were compared by ANOVA, the 40-59 age group (Mean=4.15, SD=0.46) had a higher perceived ICC level than the 20-29 group (Mean=3.85, SD=0.44) and the 30-39 group (Mean=3.80, SD=0.48). However, this difference was not statistically significant (F=2.68, *p* >.05).

Table 19
ICC level Differences across Demographic Backgrounds

		Mean	SD	N	t	F	Sig.
Gender							
	Female	**3.90**	0.45	77	-1.36		.18
	Male	3.81	0.47	131			
Marital Status							
	Single	**3.89**	0.48	112	-1.52		.13
	Married	3.79	0.44	92			
Age							
	20-29	3.85	0.44	98		2.68	.07
	30-39	3.80	0.48	98			
	40-59	**4.15**	0.46	10			

While the overall ICC level was not significantly different across gender, marital status, and age, the scores from several specific sub-factors or items did reveal statistically significant differences across demographic characteristics. As shown in Table 20, significant differences were found for gender on the items related to adaptability and flexibility (t=-2.9, p <.05), with females (Mean=3.85, SD=0.63) scoring higher than males (Mean=3.53, SD=0.71). In the area of applicative skill, particularly the ability to interpret different signs (e.g., gestures, visual marks) or languages (e.g., local expressions or phrases) from different cultures, a significant difference was found for marital status (t=2.75, p <.05). Single participants (Mean=3.55, SD=0.87) tended to score higher on this item than married participants (Mean=3.20, SD=0.93). ANOVA revealed significant differences among age groups on acquisitive skill, specifically the ability to listen to long speeches and read articles in English without difficulties (F=3.78, p <.05). The mean for those over 40 years of age (Mean=4.50, SD=0.85) was significantly higher than the means for the younger groups, ages 20-29 (Mean=3.82, SD=1.15) and 30-39 (Mean=3.52, SD=1.27).

Table 20
Different Levels of ICC Sub Factors across Demographic Backgrounds

Factors of ICC	Backgrounds		Mean	SD	N	t	F	Sig.
Adaptability & Flexibility	Gender							
		Female	**3.85**	0.63	75	-2.9		.003*
		Male	3.53	0.71	130			
Applicative Skill								
	Marital Status							
		Single	**3.55**	0.87	112	2.75		.007*
		Married	3.20	0.93	92			
Acquisitive Skill (Question 6)	Age							
		20-29	3.82	1.15	98		3.78	.020*
		30-39	3.52	1.27	98			
		40-59	**4.50**	0.85	10			

Note. *p <.05

Academic discipline backgrounds. As shown in Table 21, master students (Mean=3.96, SD=0.39) had a higher overall ICC level than doctoral students (Mean=3.81, SD=0.48). However, this difference was not statistically significant (t=1.96, *p* >.05). No significant differences were found in overall ICC levels among the different colleges (F=0.49, *p* >.05) and different majors (F=1.72, *p* >.05).

Table 21
ICC level Differences across Academic Discipline Background

Academic Backgrounds	Mean	SD	N	t	F	Sig.
Degree						
Master(s)	**3.96**	0.39	42	1.96		.051
Doctoral	3.81	0.48	164			
College						
Agriculture and Life Science	3.83	0.60	12		0.49	.860
Architecture and Urban Studies	3.98	0.44	11			
Business	3.89	0.32	12			
Engineering	3.80	0.52	84			
Liberal Arts and Human Sciences	3.90	0.44	28			
Natural Resources	3.88	0.44	14			
Science	3.80	0.42	34			
Veterinary Medicine	3.97	0.18	7			
Interdisciplinary	4.01	0.37	6			
Majors						
Computer Science	3.57	0.53	13		1.72	.170
Electrical and Computer Engineering	3.77	0.53	28			
Mechanical Engineering	4.04	0.53	10			
Curriculum and Instruction	3.86	0.45	24			

In contrast to the lack of statistical significance among academic backgrounds in overall perceived ICC, significant differences were discovered in several specific factors or items. As Table 22 presents, master students (Mean=3.64, SD=0.83) scored significantly higher in applicative skills (t=2.09, *p* <.05) than doctoral students (Mean=3.31, SD=0.95). A similar

difference was found with regard to perceived adaptability (t=2.83, p <.01), with master students (Mean=4.08, SD=0.59) scoring higher than doctoral students (Mean=3.69, SD=0.81).

To facilitate comparisons among colleges, the colleges were divided into two groups. Group A included Architecture and Urban Studies, Business, and Liberal Arts and Human Sciences, and Group B included Agriculture and Life Science, Engineering, Natural Resources, and Science. A significant difference was found between the two groups on socio-linguistic knowledge (t=2.13, p <.05), with Group A (Mean=4.28, SD=0.67) having higher scores than Group B (Mean=4.08, SD=0.81). The four most popular majors were compared by ANOVA which revealed significant differences in items related to awareness and knowledge (F=2.99, p <.05). Computer Science (Mean=3.35, SD=0.80) and Electrical & Computer Engineering (Mean=3.69, SD=0.68) majors scored lower on these items than Mechanical Engineering (Mean=4.00, SD=0.57) and Curriculum & Instruction (Mean=3.98, SD=0.55) majors.

Table 22
Sub-Factors of ICC Level Differences across Academic Discipline Background

Factors of ICC	Academic Backgrounds		Mean	SD	N	t	F	Sig.
Applicative Skills	Degree	Master(s)	**3.64**	0.83	42	2.09		.037*
		Doctoral	3.31	0.95	164			
Adaptability	Degree	Master(s)	**4.08**	0.59	38	2.83		.006*
		Doctoral	3.69	0.81	163			
Sociolinguistic Knowledge	College	Group A[1]	**4.28**	0.67	51	2.13		.034*
		Group B [2]	4.08	0.73	142			
Awareness & Knowledge	Major	Computer Science	3.35	0.80	13		2.99	.040*
		Electrical & Computer Engineering	3.69	0.68	28			
		Mechanical Engineering	4.00	0.57	10			
		Curriculum & Instruction	3.98	0.55	21			

Note. *p <.05
  [1.] Group A is the sum of Architecture and Urban Studies, Business, and Liberal Arts and Human Sciences.
  [2.] Group B is the sum of Agriculture and Life Science, Engineering, Natural Resources, and Science

Cultural Origins. As shown in Table 23, students from India (Mean=4.00, SD=0.37) and other countries (Mean=4.03, SD=0.44) revealed a higher overall level of ICC than Korean (Mean=3.60, SD=0.43) or Chinese students (Mean=3.72, SD=0.43). These differences were statistically significant (F=13.57, $p < .001$). Also, students who had more than one native language (Mean=4.00, SD=0.45) had a higher perceived level of ICC than students who had a single native language (Mean=3.81, SD=0.46).

Table 23
ICC Level Differences across Cultural Origins

Cultural Origins		Mean	SD	N	t	F	Sig.
Nationality							
	India	4.00	0.37	30		13.57	.000*
	China	3.72	0.44	47			
	Korea	3.60	0.43	55			
	Other countries	4.03	0.44	76			
More than one native language	Yes	4.00	0.45	38	2.31		.022*
	No	3.81	0.46	170			

*Note. *p <.05*

The results shown in Table 23 were for overall ICC. More detail is provided by Table 24 which presents the results of comparisons within sub-categories across cultural origins. That is, the differences among India, China, Korea, and other countries were statistically significant in the following sub-categories of ICC: respect and openness (F=2.70, $p < .01$), acquisitive skill (F=18.47, $p < .01$), applicative skill (F=16.36, $p < .001$), cultural knowledge (F=5.31, $p < .01$), adaptability (F=4.14, $p < .01$), flexibility (F=3.94, $p < .01$), and effective communication (F=9.54, $p < .01$).

Table 24
Sub-Factors of ICC Level Differences across Cultural Origins

Sub factors of ICC	Nationality	Mean	SD	N	F	Sig.
Respect & Openness						
	India	4.43	0.47	30	2.70	.000*
	China	4.57	0.52	47		
	Korean	4.31	0.68	55		
	Other countries	4.57	0.58	76		
Curiosity and Discovery						
	India	3.87	0.68	30	1.794	0.15
	China	4.03	0.70	47		
	Korean	3.82	0.68	54		
	Other countries	4.09	0.73	76		
Acquisitive Skill						
	India	4.40	0.42	30	18.47	.000*
	China	3.64	0.74	47		
	Korean	3.50	0.78	55		
	Other countries	4.23	0.72	76		
Applicative Skill						
	India	4.03	0.51	30	16.36	.000*
	China	2.97	0.97	47		
	Korean	3.00	0.88	55		
	Other countries	3.66	0.84	76		
Cultural Knowledge						
	India	3.57	0.62	29	5.31	.002*
	China	3.40	0.80	47		
	Korean	3.21	0.69	55		
	Other countries	3.71	0.76	76		
Sociolinguistic Knowledge						
	India	4.11	0.61	28	1.66	.176
	China	3.96	0.73	47		
	Korean	4.07	0.77	55		
	Other countries	4.24	0.69	76		
Adaptability						
	India	3.89	0.73	27	4.14	.007*
	China	3.50	0.69	47		
	Korean	3.47	0.61	55		
	Other countries	3.79	0.71	76		
Flexibility						
	India	4.22	0.54	27	3.94	.009*
	China	3.90	0.66	47		
	Korean	3.80	0.75	55		
	Other countries	4.14	0.69	76		

Sub factors of ICC	Nationality	Mean	SD	N	F	Sig.
Effective Communication						
	India	3.78	0.70	29	9.54	.000*
	China	3.36	0.84	47		
	Korean	3.22	0.80	55		
	Other countries	3.86	0.70	76		
Appropriate Communication						
	India	3.91	0.73	29	.431	.731
	China	4.04	0.76	47		
	Korean	3.90	0.64	54		
	Other countries	4.02	0.90	76		

*Note. *p <.05*

Previous experiences. The job experience of NNS graduate participants was not related to the overall ICC level (t=4.1, *p* >.05). As shown in Table 25, there was no difference in the average of ICC level between participants who had job experiences (Mean=3.85, SD=0.48) and those who had no job experience (Mean=3.83, SD=0.44). This result was confirmed through a comparison of the ICC levels across participants' length of working experience. Although the analysis showed that the longer participants had been working in their professional field, the more they agreed with the items indicating intercultural communicative competence, this increased ICC level did not show dramatic or statistically significant differences (F=0.99, *p* > .05). In regard to how long participants have lived in the U.S, no pattern was found in the overall ICC level and there was no significant difference (F=0.49, *p* >.05).

Although participants who had intercultural experiences prior to coming to the U.S. (Mean = 3.9, SD=0.47) revealed higher perceptions of intercultural communication than participants who did not have significant prior intercultural experiences (Mean=3.8, SD=0.46), the difference was not statistically significant or meaningful (t=1.6, *p* >.05).

Table 25
ICC Level Differences across Previous Experiences

Previous experiences	Mean	SD	N	t	F	Sig.
Job Experiences						
Yes	3.85	0.48	134	.41		.68
No	3.83	0.44	74			
Years of working experiences						
0-3 years	3.81	0.48	54		0.99	0.42
3-6 years	3.80	0.48	41			
6-9 years	3.88	0.52	19			
9-12 years	3.90	0.40	11			
12-15 years	4.08	0.25	2			
more than 15 years	4.22	0.42	6			
Years of living in U.S.						
less than 1year	3.79	0.47	33		0.49	0.78
1-2 years	3.91	0.42	43			
2-3 years	3.77	0.54	33			
3-4 years	3.82	0.55	21			
4-5 years	3.83	0.49	20			
more than 5 years	3.87	0.41	57			
Intercultural experiences						
Yes	3.90	0.47	94	1.6		.110
No	3.80	0.46	114			

The differences across participants' previous experiences were more dramatically revealed when looking at the sub-factors of ICC level. As shown in Table 26, participants who had more than 6 years of working experience were more confident than those with less experience in knowledge about the social characteristics of language (F=4.43, *p* <.05), adaptability in the use of appropriate strategies for adjusting to the new cultural environment (F=6.24, *p* <.05), and flexibility in considering others' feelings, emotions, situations, or thoughts and the consideration of these for effective communication (F=7.42, *p* <.05). However, participants with less than 6 years working experience perceived higher competence in interacting appropriately in a variety of situations within the new culture (F=2.96, *p* <.05).

There was a difference in acceptance that there were some times that they may not understand differences between cultures, by the number of years in the U.S ($F=2.68$, $p <.05$). Participants living in the U.S. for 3 to 4 years (Mean =4.05, SD=1.97) had more competence in this item than those with either more or fewer years in the U.S. Students with previous intercultural experience (Mean=3.38, SD=0.92) presented more competence in interpreting signs or languages from different cultures ($F=2.69$, $p <.01$) than those without such experience.

Table 26
Sub Factors of ICC across Previous Experiences

Factors	Previous experiences		Mean	SD	N	t	F	Sig.
Awareness & Knowledge (Question 12)	Working							
		less than 6 years	3.81	0.98	93		4.43	0.037*
		more than 6 years	**4.18**	0.80	38			
Adaptability (Question 13)	Working							
		less than 6 years	3.66	0.87	94		6.24	0.014*
		more than 6 years	**4.15**	0.66	38			
Flexibility (Question15)	Working							
		less than 6 years	3.90	0.80	94		7.42	.007*
		more than 6 years	**4.32**	0.74	38			
Appropriateness (Question20)	Working							
		less than 6 years	**4.13**	0.79	92		4.49	.036*
		more than 6 years	3.76	1.13	38			
Attitude (Question 4)	Living in U.S.							
		less than 1year	3.82	1.10	33		2.68	.023*
		1-2 years	3.93	0.86	43			
		2-3 years	3.85	0.91	33			
		3-4 years	**4.05**	1.07	21			
		4-5 years	3.84	0.90	19			
		more than 5 years	3.32	1.23	57			
Skill (Question7)	Intercultural Experiences	Yes	**3.38**	0.92	94	2.96		.003*
		No	2.98	1.01	113			

Other Competences for ICC Identified by Participants

At the close of Part 2: Intercultural Communication, participants were asked to offer open-ended comments for identifying other abilities that were not listed in the survey which they felt were important for non-native English speaking graduate students. Valuable comments on this question were made by 27 participants. Theme analysis, a technique utilized in qualitative research, was conducted to divide participants' comments into several categories. In carefully reviewing the responses, it was found that the comments were related to the dimensions and components that had already been identified for the present study: (1) attitude, (2) skill, (3) knowledge/awareness, (4) adaptability/flexibility, and (5) effective and appropriate communication.

Attitude. Some participants emphasized the individual's attitude toward intercultural communication. Their comments pointed to the need for attitude change in different directions. For example, one participant listed the importance of assertiveness and pointed out the lack of assertiveness among non-native speakers. This person stated:

> In many cultures, outside of the U.S., assertiveness, particularly when communicating
> with older people or superiors in one's profession, can be easily perceived as lack of
> respect. This attitude, I believe, often hinders the ability of non-natives in U.S. from
> presenting their points of view clearly.

In another perspective, one respondent stated that NNS graduate students need "humility to accept corrections without feeling offended". Another respondent emphasized the importance of openness to others' opinions and thoughts. To sum up the attitude related responses, a balance between assertiveness and openness should be considered an important competence that NNS graduate students need as they experience and study in a new culture and environment.

Skills. Few participants made skill related comments in comparison to other categories. In regard to acquisitive skill in recognizing cultural differences, one respondent said that "I am sensitive to the way I behave to people from different cultures." However, several respondents pointed out the importance of interpretation skill. One respondent reemphasized the ability to interpret "the gesture, local expressions or phrases" and another respondent stated "slangs are difficult to follow." In addition, one respondent stated that NNS graduate students also need to know "how to let [people] know [their] own culture and let [others] understand [their] weird behaviors." This comment emphasized the importance of increased understanding of other cultures by members of the host culture, as well as understanding or interpretation of different cultural signs or languages.

Awareness and knowledge. There were common opinions about the importance of understanding and considering others' religion. Several respondents pointed out the consideration of religious behavior. For example, one respondent stated that some of people from the Middle East and India are dealing with "food issues and things not to do among them." Another respondent asserted that such "individuals' religious background strongly affects one's ability to successfully accomplish graduate level studies."

Adaptability and flexibility. Several participants pointed out the ability to truly enjoy the new culture and environment by building up new social networks. One respondent stated that NNS graduate students need to "build up [their] own social network in a brand new environment within an appropriate time frame, inside and outside [their] academic field." As an example, one respondent mentioned the "ability to join social events such as a kind of party or meeting." It was also said by one respondent that enjoying the new culture is required "[to] see the beauty and [to] tolerate the differences of the other culture to [their] own cultures." In regard to building new

social networks, one respondent addressed the ability "to make … meaningful friendship with people from other culture," and another respondent addressed good "relationship and communication with professors or advisors." Another comment was that one needs "to be [fully immersed] and [effectively interacted] with people outside their communities."

Effective and appropriate communication. Some participants emphasized the external outcome of intercultural communication. For example, one respondent listed the ability for "[effective] collaboration, spirit of team work, [and] an open mind to accept views conflicting to his/her own." Another respondent pointed out a concern about appropriate communication, stating that "sometimes it is confusing for me to know whether the way I'm behaving/interacting with cross-culture is appropriate or not as I, sometimes, can't distinguish the responses whether my behavior/approach was right or wrong."

Some comments were not able to be incorporated into the above five dimensions. Several respondents pointed out that intercultural communication was related to the individual's personality and self-efficacy or confidence. In addition, several participants used the space to reveal suggestions or concerns for this research, or to share their general thoughts in relation to intercultural communication. One respondent was concerned about the practice of a single culture in a culturally diverse environment. Another respondent revealed a perception of unfair treatment or a tendency for other native speakers to behave politely. Generally, the responses revealed the complexity of variables related to intercultural communicative competence and diverse characteristics from the students' different perspectives about cultural issues.

This section presents the results of the second research question: what are the perceptions of NNS graduate students in regard to the effective Instructional Design (ID) strategies for their Socially Engaged Learning (SEL)? Analysis methods for this question were similar to those used for the question on ICC. The researcher analyzed the overall perceptions of survey participants about instructional design strategies for socially engaged learning as well as perceptions for sub-categories of the concept. The ID strategies for SEL were composed of 17 items that measured four categories: (1) gradual engagement and active participation, (2) rich cultural context, (3) self-regulation and learning ownership, and (4) integration of communication tools. This section will also provide comparisons of perceptions of instructional design strategies for socially engaged learning for different participants based on background characteristics. In addition, this section includes other effective instructional strategies suggested by the participants.

Overall Perception about ID Strategies of SEL

The overall perception about ID strategies for SEL is a scale score obtained by averaging the 17 item scores. As shown in Table 27, NNS graduate students agreed that the ID strategies for SEL were important strategies for helping them to better learn and successfully study in their graduate programs (Mean=3.78, SD=0.54). This self-reported measure used a six-point Likert scale ranging from 0=strong disagreement, implying the lowest importance, to 5=strong agreement, implying the highest level of importance.

On the four sub-categories, survey participants agreed more strongly with the items related to gradual engagement and active participation (Mean=3.93, SD=0.63) and rich cultural context (Mean=3.93, SD=0.68) than the items related to self-regulation and learning ownership (Mean =3. 74, SD=0.58) and integration of communication tools (Mean=3.52, SD=0.92).

Table 27

Perceived Effectiveness on ID Strategies for Socially Engaged Learning

ID Strategies for SEL	Mean	SD	N
Overall	3.78	0.54	204
Sub Categories			
Gradual Engagement and Active Participation	3.93	0.63	204
Rich Cultural Context	3.93	0.68	204
Self-Regulation and Learning Ownership	3.74	0.58	203
Integration of Communication Tools	3.52	0.92	202

Gradual Engagement and Active Participation

As shown in Table 28, 30.2% of respondents (n=62) strongly agreed, 45.5% (n=93) agreed, and 13.6% (n=27) slightly agreed with the statement that they could learn more effectively when the instructor provided greater structure (Mean=3.98, SD=0.97). More than half of the respondents to the item stating that they could learn more effectively with opportunities for interacting with other students through reviewing each others' work or teaching each other (52%, n=105) agreed, and 25.2% (n=51) strongly agreed with the statement (Mean=3.95, SD=0.90). There was a higher level of agreement with the effectiveness of using sample cases or models to observe, interpret, and apply to their own work (Mean=4.19, SD=0.76). However, in regard to using group learning or team work rather than individual work, only 37.3% (n=76) of respondents agreed and 21.2% (n=43) strongly agreed (Mean=3.60, SD=1.13). Overall, in looking at the low frequencies of the N/A (not applicable) response choice, most participants had experience with gradual engagement and active participation in their graduate programs.

Table 28

Perceived Effectiveness of Gradual Engagement and Active Participation

#	Gradual engagement and Active Participation	Frequency (unit=n, %)							M	SD	N
		0	1	2	3	4	5	N/A[1]			
	(I can learn more effectively …)										
1.	with greater structure (e.g., step by step guidance) provided by the instructor.	1 *0.5*	4 *2.0*	11 *5.4*	27 *13.2*	93 ***45.4***	62 *30.2*	7 *3.4*	3.98	0.97	205
2.	with opportunities for interacting with other students through reviewing each others' work or teaching each other.	2 *1.0*	1 *0.5*	10 *5.0*	31 *15.3*	105 ***52.0***	51 *25.2*	2 *1.0*	3.95	0.9	202
3.	with sample cases or models to observe, interpret, and apply them to my own work.	1 *0.5*	 *0.0*	4 *2.0*	20 *9.9*	103 ***50.7***	70 *34.5*	5 *2.5*	4.19	0.76	203
4.	with group learning or team work rather than individual work.	4 *2.0*	8 *3.9*	13 *6.4*	59 *28.9*	76 ***37.3***	43 *21.1*	1 *0.5*	3.6	1.13	204

Note. [1] N/A indicates "not applicable", implying that participants did not experience the specific item.

In addition, this study reviewed the group differences for the perceived effectiveness about each item in this category, gradual engagement and active participation, across students' background characteristics. There was no group difference in every item except the third one about the effectiveness of sample cases or models. As shown in Table 29, compared to Indian (Mean 3.96, SD-0.92) or Korean students (Man=3.98, SD=0.76), participants coming from China (Mean=4.27, SD=0.62) and other countries (Mean=4.38, SD=0.74) strongly agreed with the importance of sample cases or models for their own work.

Table 29

Differences of Perceived Effectiveness about Gradual Engagement across Students' Nationality

	Nationality	Mean	SD	N	F	Sig.
3. with sample cases or models … to my own work.	India	3.96	0.92	26	4.06	.008*
	China	**4.27**	0.62	44		
	South Korea	3.98	0.76	55		
	Other countries	**4.38**	0.74	73		

*Note. *p* <.05*

Rich Cultural Context

Instructional design strategies that emphasize rich cultural context were represented by five items, shown in Table 30. For the item concerning the perceived effectiveness of activities or projects related to real world issues, 40.1% (n=81) of respondents agreed and 38.1% (n=77) strongly agreed (Mean=4.15, SD=0.85) that this was an effective strategy. A large proportion of respondents (44.9%, n=92) strongly agreed that they could learn more effectively when the tasks were connected to their previous experiences (Mean=4.30, SD=0.81). This item had the highest mean score of all the items in Part 3 of the survey. On the other hand, fewer participants supported the importance of connecting learning tasks with their specific cultural situation (Mean=3.68, SD=1.20). It is noteworthy that 17 participants (8.4%) indicated that they had not experienced such an instructional strategy in their classes.

Most participants either agreed (38.9%, n=79) or strongly agreed (34.0%, n=69) that they could learn more effectively when an instructor provided detailed background information such as the history, origin, or related stories to explain concepts or words (Mean=4.02, SD=1.0). For this question, nine participants (4.4%) indicated they had not experienced this strategy. Participants presented different perceptions about working collaboratively with culturally different learners and they regarded this strategy as relatively less important (Mean=3.47, SD=1.03). Specifically, 12.7% (n=26) of respondents slightly disagreed and 4.4% (n=9) disagreed that collaboration with other learners from different cultural backgrounds was an effective strategy, while 40.7% (n=83) agreed and 12.7% (n=26) strongly agreed. Ten participants (4.9%) reported no experience with this strategy in classes.

Table 30

Perceived Effectiveness about Rich Cultural Context

#	Rich Cultural Context	Frequency (unit=n, %)							M	SD	N
		0	1	2	3	4	5	N/A			
(*I can learn more effectively …*)											
5.	with activities or projects that relate to real world issues.		2	5	31	81	77	6	4.15	0.85	202
			1.0	2.5	15.3	**40.1**	38.1	3.0			
6.	when the tasks are connected to my previous experiences.	1	2	2	17	88	92	3	**4.30**	0.81	205
		0.5	1.0	1.0	8.3	42.9	**44.9**	1.5			
7.	when the tasks are relate to my specific cultural situation.	4	7	17	39	68	51	17	3.68	1.20	203
		2.0	3.4	8.4	19.2	**33.5**	25.1	8.4			
8.	when an instructor provides detailed background information such as the history, origin, or related stories to explain some concepts or words.	2	3	8	33	79	69	9	4.02	1.00	203
		1.0	1.5	3.9	16.3	**38.9**	**34.0**	4.4			
9.	when I collaboratively work with other learners from different cultural backgrounds.		9	26	50	83	26	10	3.47	1.03	204
			4.4	**12.7**	**24.5**	**40.7**	12.7	4.9			

T-test analysis found significant differences in responses to Question 6 ("when the tasks are connected to my previous experience") and Question 7 ("when the tasks are related to my specific cultural situation") across gender, degree, college, and language. As shown in Table 31, female participants had a higher rate of agreement with the task's connection to their previous experiences (t=-2.30, p <.05) and the task's relevance to their specific cultural situation (t=-2.45, p <.05) as important strategies than male participants. In regard to the effectiveness of the strategy of incorporating tasks with students' specific cultural situations, it was found that perceptions differed across degree, college, and language. That is, doctoral students (Mean=3.78, SD=1.21) considered this strategy more important than master students (Mean=3.32, SD=1.12) (t=-2.12, p <.05). Participants from Architecture and Urban Studies, Business, and Liberal Arts

and Human Sciences (Mean=4.02, SD=1.09) more strongly agreed with the importance of this

strategy than did the participants from Agriculture and Life Science, Engineering, Natural

Resources, and Science (Mean=3.56, SD=1.21; t=2.28, *p* <.05). This strategy was also

considered more important (t=-2.1, *p* <.05) by respondents who had a single native language

(Mean=3.77, SD=1.13) than those who had more than one native language (Mean=3.26,

SD=1.46).

Table 31
Differences of Perceived Effectiveness of Rich Cultural Context across Students' Backgrounds

	Backgrounds		Mean	SD	N	t	Sig.
6. when the tasks … my previous experiences.	Gender	Male	4.20	0.90	128	-2.30	0.02*
		Female	**4.47**	0.60	74		
7. when the tasks … my specific cultural situation.	Gender	Male	3.53	1.28	128	-2.45	0.023*
		Female	**3.97**	0.98	74		
	Degree	Master(s)	3.32	1.12	38	-2.12	0.35*
		Doctoral	**3.78**	1.21	147		
	College	Group A[1]	**4.02**	1.09	47	2.28	0.024*
		Group B [2]	3.56	1.21	128		
	Language	Multiple Native	3.26	1.46	31	-2.1	0.030*
		Single Native	**3.77**	1.13	155		

Note. *p* <.05

Self-Regulation and Learning Ownership

Instructional design strategies related to self-regulation and learning ownership comprise

six items. Table 32 presents participants' perceptions on these items. Compared to other items in

this category, participants agreed less strongly with questions 10 through 13, which are related to

responsibility and ownership of learning. In question 10, 33.5% (n=68) slightly agreed that they

could learn more effectively when the research topic was set by themselves rather than given by

the instructor (Mean =3.34, SD=1.08). Regarding having the student decide the working process rather than having it given by the instructor, 35.5% (n=71) agreed and 31.0% (n=62) slightly agreed (Mean=3.37, SD=1.04). However, in regard to the responsibility for assessing the quality of their own work, participants responded more diversely and less positively (Mean=3.31, SD=1.12). That is, although 11.4% of respondents (n=23) strongly agreed, 39.6 % (n=80) agreed, and 21.3% (n=43) slightly agreed with this item, a large number slightly disagreed (19.8%, n=40), disagreed (5.4%, n=11), and strongly disagreed (0.5%, n=1).

For the item regarding getting direct assistance with topics or coursework that they may not understand, more than half of the respondents (52.9%, n=108) agreed and 24.5% (n=50) strongly agreed with the strategy's effectiveness (Mean=3.98, SD=0.81). Participants revealed more positive responses to the feedback related strategies in questions 14 and 15. Ninety-six participants (47.1%) agreed and 35.3% (n=72) strongly agreed that they could learn more effectively when they received immediate feedback from their instructors (Mean=4.14, SD=0.81). However, participants even more strongly agreed with receiving detailed feedback (Mean=4.30, SD=0.79), with 45.8% (n=92) strongly agreeing and 40.3% (n=81) agreeing with the strategy.

Table 32
Perceived Effectiveness about Self-regulation

#	Self-Regulation and Learning Ownership	Frequency (unit=n, %)							M	SD	N
		0	1	2	3	4	5	N/A			
	I can learn more effectively ...										
10.	when the research topic is set by myself rather than given by the instructor.	1	7	35	68	59	31	2	3.34	1.08	203
		0.5	*3.4*	*17.2*	***33.5***	*29.1*	*15.3*	*1.0*			
11.	when the working process is decided by myself rather than given by the instructor.		9	31	62	71	26	1	3.37	1.04	200
			4.5	*15.5*	*31.0*	***35.5***	*13.0*	*0.5*			
12.	when I am responsible for assessing the quality of my own work.	1	11	40	43	80	23	4	3.31	1.12	202
		0.5	*5.4*	***19.8***	***21.3***	***39.6***	*11.4*	*2.0*			
13.	when I can get direct assistance with topics or coursework that I may not understand.		1	10	32	108	50	3	3.98	0.81	204
			0.5	*4.9*	*15.7*	***52.9***	*24.5*	*1.5*			
14.	when I get immediate feedback from my instructors.		2	5	27	96	72	2	4.14	0.81	204
			1.0	*2.5*	*13.2*	***47.1***	*35.3*	*1.0*			
15.	when I get detailed feedback from my instructors.		1	5	20	81	92	2	**4.30**	0.79	201
			0.5	*2.5*	*10.0*	***40.3***	***45.8***	*1.0*			

Responses on some of these items differed for respondents across degree, major, nationality, and gender. It was found that doctoral students (Mean=3.44, SD=1.03) more strongly agreed than master students (Mean=2.95, SD=1.16) that they could learn more effectively when the research topic was set by themselves (t=-2.60, $p <.05$). For the questions about feedback, participants who had some specific majors such as Computer Science (Mean=4.38, SD=0.65) and Curriculum and Instruction (Mean=4.42, SD=0.69) more strongly agreed with the importance of immediate feedback than other students from programs such as Electrical and Computer Engineering (Mean=3.92, SD=0.93) and Mechanical Engineering (Mean=3.60, SD=0.97; F=3.07, $p <.05$). Korean participants (Mean=3.84, SD=0.69) revealed lower agreement with the importance of immediate feedback than students from other countries (F=4.53, $p <.01$).

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A statistically significant difference between genders was observed on the effectiveness of detailed feedback from the instructors (t=-2.13, $p <$.05), with female participants (Mean=4.45, SD=0.75) agreeing more strongly than male participants (Mean=4.21, SD=0.80).

Table 33

Differences of Perceived Effectiveness of Self-regulation across Students' Background

	Backgrounds		Mean	SD	N	t	F	Sig.
10. when the research topic is set by myself …	Degree							
		Master(s)	2.95	1.16	38	-2.60		0.010*
		Doctoral	**3.44**	1.03	162			
14. when I get immediate feedback from my instructors.	Major[1]							
		CS	**4.38**	0.65	13		3.07	0.034*
		ECE	3.92	0.93	26			
		ME	3.60	0.97	10			
		C&I	**4.42**	0.69	19			
	Nationality							
		India	**4.11**	0.80	57		4.53	0.004*
		China	**4.20**	0.83	46			
		Korea	3.84	0.86	55			
		Others	**4.35**	0.71	74			
15. when I get detailed feedback from my instructors.	Gender							
		Male	4.21	0.80	126	-2.13		0.03*
		Female	**4.45**	0.75	73			

Note. [1]CS: Computer Science, ECE: Electrical and Computer Engineering, ME: Mechanical Engineering, C&I: Curriculum and Instruction

Integration of Communication Tools

The last two questions in Part 3 of the survey were about the integration of communication tools. Compared with items in other categories, participants were very widely distributed in their ratings of the instructional strategies related to this category. However, they moderately supported the effectiveness of using computers to communicate with their instructors and other students (Mean=3.45, SD=1.17). Almost 40 participants (18.6%) disagreed to some degree with this item and five participants indicated that they did not experience the use of the

computer for communication with instructors and other students. Question 17 asked whether

participants considered a synchronous environment (chatting, conferencing, and face-to-face

discussion) more effective for learning than an asynchronous environment (discussion boards

and e-mail). For this question, 21.8% strongly agreed, 37.1% agreed, and 19.8% slightly agreed

that participating in synchronous communication was more effective for learning (Mean=3.6,

SD=1.16). No significant difference across students' background characteristics were found for

the items in this category.

Table 34
Perceived Effectiveness of Integration of Communication Tools

#	Integration of Communication Tools	Frequency (unit=n, %)							M	SD	N
		0	1	2	3	4	5	N/A			
	I can learn more effectively ...										
16.	when I use the computer to communicate with my instructors and other students.	3 1.5	10 5.0	24 12.1	51 25.6	71 **35.7**	35 17.6	5 2.5	3.45	1.17	199
17.	when I participate in synchronous environment rather than asynchronous environment.	3 *1.5*	6 *3.0*	26 *12.9*	40 *19.8*	75 ***37.1***	44 *21.8*	8 *4.0*	3.6	1.16	202

Other Important Strategies Perceived by NNS Graduate Students

At the close of Part 3: Effective Instructional Strategies, participants were asked to offer

open-ended comments identifying other strategies that they thought were effective for their

learning, studying, and communication with others. They were asked to specify the kinds of

instructional strategies that have been effective for them. In response to this question, 21

participants made valuable comments. Using the same methodology utilized for the open-ended

items in Part 2, a theme analysis was conducted and participants' comments were grouped into

these categories: (1) social interaction and engagement, (2) rich cultural context, (3)

metacognitive strategies for learning, (4) use of diverse communication channels, and (5) other efforts.

Social interaction and engagement. Some participants emphasized "[talking] with colleagues about things regardless business or work." One participant stated that informal talking with colleagues from different cultures can help "go beyond the boundary of identical things and [see] something different each other." Another participant responded that "[talking] with friends who have similar [previous] experiences" helped them to learn in their graduate program. In regard to the classroom situation, one participant stated that a student can learn better just "when he or she is able to speak in class." However, just "speaking in class" might not be enough for effective learning. Another participant said that NNS students needed to "read more" and participate more actively in the classroom and in seminars related to their subject field.

In addition to active participation, it was found that "reliability" facilitated mutual engagement. One participant stated that "if I have reliability with instructor and classmates, I would be more motivated to perform better." It was also recommended that every member in the community express "respect" for other members' opinions and thoughts regardless of whether the member had higher or lower performance. In regard to this, one participant pointed out that the "feeling of being respected is very important for students who have potential and currently low performance."

Rich cultural context. Several participants addressed the importance of having diverse cultural knowledge. One participant stated that "when students of one nationality live, work, and study with monotypes (their own lingo speakers) they misunderstand the important multiculturalism." This response was a reminder that having intercultural knowledge must be obtained by not only international students but also domestic students living in the host culture.

Other students addressed a concern about cultural differences that may interrupt effective group learning in the classroom. One student stated that "[cultural] differences [sometimes] cause combative cultural arguments which may often affect classroom groupings and discussions." Although many participants did not address the possibility that cultural differences could hinder effective learning, this important issue should be considered in further research and investigation.

Metacognitive strategies. Many participants introduced a variety of methods that made their learning and studying effective. Most of these methods were actually metacognitive strategies for learning. One participant provided a detailed explanation of his or her note taking strategy:

Take the notes in English, those are the terms you need to learn. To write in your [native] language will only confuse. Summarize the important information by yourself. If you don't understand something most of the times there is plenty information in the internet. Organize subjects into questions and answers. Makes it easier to know and associate subjects when you are not looking at the answer.

Using helpful resources and seeking helpers were mentioned in other responses. For example, one respondent pointed out the use of library resources, including inter library loan (ILL) services, and the use of other databases in school as important strategies. Some respondents suggested that since NNS graduate students needed to develop English writing skills, getting help with English through the writing center and other resources (e.g., native English speaking friends) were important help-seeking strategies.

Goal setting and planning were mentioned as important metacognitive strategies throughout the participants' responses. One respondent emphasized self-motivation by stating

that "you need to be motivated by your own way." Another respondent pointed out "realistic, step-by-step work and study plans" as important considerations. One student emphasized setting goals to keep working, and described using a commitment with an adviser as a self-regulation tool. The person stated, "I work better and learn more when there is a pressure put on me, either from my personal goals or from my professor/advisor, such as a challenge to prove the quality of my work, or opportunity to publish my work."

Use of diverse communication channels. Some students commented on the effective use of communication tools. One respondent suggested that different communication channels could help to solve misunderstandings. This is an appropriate use of asynchronous communication. The respondent stated, "If I have something problem with other students in communicating face to face, we use email to communicate with each other. It helps us to decrease misunderstanding." However, the most effective communication channels to use seemed to be related to a person's linguistic ability and personality. Some people were more comfortable resolving misunderstandings through synchronous communication. In this regard, one respondent stated that "I am thinking, my strategy is changed since I am studying in here. For example, I like more synchronous environment in here because I can solve any misunderstandings from cultural differences, language difference, and etc." To accommodate the different needs of students whose native language is not English, multimedia and diverse communication channels should be made available. "Emotional communication" was emphasized by respondents as an important consideration when using diverse communication channels.

Other efforts. Most of the strategies suggested by participants fit into the four concepts of socially engaged learning as used in this study. However, because the survey items did not include several fundamental instructional design strategies, participants pointed out these basics

as important strategies. Examples include providing clear objectives, outlines, and rubrics. Some participants stated their learning preferences. For example, one respondent stated, "I prefer very simple writing of texts, and lecture notes." One respondent emphasized reading the learning materials prior to the class. This person stated that "readings prior to the class … help me to understand better in the class." As a comment on the instructor's role, one participant emphasized providing a more individualized and customized learning environment with concern for students who do not follow well in class. The respondent stated that "it is possible that … a student may not be clear with all basics and fundamentals, so try to explain them in each and every lecture as the things come by so that there is no confrontation in degree of understanding, and possibly review of each student personally if class size is smaller."

Chapter 5: Discussion and Conclusion

The purpose of this study was to describe NNS graduate students' characteristics and to suggest effective instructional design strategies for them to become more socially engaged and to successfully study in a U.S. graduate program. With this purpose in mind, the study focused on investigating NNS graduate students' perceptions on intercultural communicative competence (ICC) and effective instructional design strategies for socially engaged learning. In this chapter, the results of the analyses presented in Chapter 4 will be interpreted. Major findings from the analyses are discussed in light of two research questions:

1. What are the perceptions of NNS graduate students in regard to their intercultural communicative competence?

2. What are the perceptions of NNS graduate students in regard to the instructional strategies for their socially engaged learning?

In the conclusion, instructional design implications from the discussion will be provided based on both the findings from the survey and the findings from relevant previous research. Finally, this chapter will close with the contributions of this study.

Major findings and Instructional Design Implications

Findings from this study are summarized and discussed within three threads: diversity of NNS graduate students; high overall intercultural communicative competence (responding to the first research question); and positive perceptions about instructional design strategies for socially engaged learning (responding to the second research question).

Thread #1: Diversity of NNS Graduate Students

Participants in this study were 208 NNS graduate students who were enrolled in graduate programs at Virginia Tech in the spring of 2010. The participants presented a variety of characteristics in their demographic backgrounds, academic disciplines, cultural origins, and previous experiences. Participants included both male (63%) and female (37%) students, single (53.8%) and married (44.2%) students, and students of a wide range of ages, with 47.1% aged 20-29, 47.1% aged 30-39, 3.4% aged 40-49, and 1.5% over 50.

The students were in doctoral (78.8%) and master (20.2%) programs, representing nine different colleges and 44 different majors. Large proportions of participants were in the College of Engineering (40%), the College of Science (16%) and the College of Liberal Arts and Human Sciences (14%). The distribution within the sample was generally consistent with the proportions of the target population – the international graduate students at Virginia Tech.

The participants represented various nationalities and native languages. Although South Korea (26.5%), China (22.6%), and India (14.4%) were the top three native countries of NNS graduate students, 41 other nations were represented in the sample. The distribution of this variable was also largely consistent with the proportions of the target population. Most participants had a single native language (81.7%), with the largest language groups being Korean (23.5%), Chinese (19%), and Hindi (8.2%).

Most participants had previous job experiences (64.4%) with the majority of these having 0-3 years (40.6%) or 3-6 years (30.8%) of work experience. The participants had lived in the U.S. for various lengths of time as follows: less than 1 year (15.9%), 1-2 years (20.8%), 2-3 years (15.9%), 3-4 years (10.1%), 4-5 years (9.7%), and more than 5 years (27.5%). Most participants had taken English language education (96.6%) and half of the participants had previous

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intercultural experiences (45.2%) by living a variety of places including other areas in the U.S., Europe, Asia, Canada, and other places, for durations from 6 weeks to 15 years.

In summary, characteristics of participants in this study were consistent with those of the target population, NNS graduate students at Virginia Tech. It is noteworthy that NNS graduate students indeed represented "diversity." Although there were several groups representing specific national cultures or specific academic discipline cultures, the data from participant backgrounds provide evidence that pluralistic instructional solutions should be considered.

Despite such diverse student background characteristics, what NNS graduate students had in common was their need to adjust socially and culturally to a new environment. They needed to develop strong intercultural communicative competence for both their personal well-being and their academic success. Further, they should implement their own effective learning strategies in addition to having effective and appropriate instruction based on socially engaged learning. The next thread will discuss the major findings of the assessment of their intercultural communicative competence.

Thread #2: High Overall ICC Level Perceived by NNS Graduate Students

In applying the descriptive and quantitative research approach, this study explored NNS graduate students' intercultural communicative competence. The major finding was that participants of this study had a moderately high perception of their overall ICC level (Mean=3.78, SD=0.54). In addition to the overall score, reviewing the scores for the sub categories of ICC allowed the researcher to interpret the relative importance of the various aspects. The analysis revealed three gaps, which are discussed below in light of instructional design implications for NNS graduate students.

Gap#1: Mind vs. action. This study found that taking actual actions or engaging in practices for intercultural communication was harder than just recognizing a desirable attitude or having open minds toward cultural differences. While most participants indicated that they did respect those from different cultures and did not judge people because of cultural differences, they revealed a relatively passive stance in looking for opportunities to interact with culturally different people. The average score from the respect and openness subscale (Mean=4.48, SD=0.59) was significantly higher than the one from the curiosity and discovery subscale (Mean=3.97, SD=0.71). As another example, NNS graduate students in this study revealed high level of attitude; however, they were relatively less competent in skills for intercultural communication. The higher average score from the attitude subscale (Mean =4.23, SD=0.51) as compared with the skills score (Mean=3.66, SD=0.79) confirms this tendency. Similarly, participants had a higher average score from internal outcomes of ICC (Mean=3.83, SD=0.63) than from external outcomes (Mean=3.70, SD=0.66). While NNS graduate students agreed more strongly with the items related to adaptability or flexibility, they agreed less with the items related to actual communication.

This finding is supported by the concept of gradually developed attributes of ICC. Deardorff (2007) stated that as people increasingly have more respect, openness, and cultural curiosity, they can gain more knowledge about intercultural communication through the development of communicative and cognitive skills. That is, ICC begins with attitude (Deardorff, 2007). In considering such a development process for ICC, it is assumed that the status of NNS graduate students participating in this study was conceived as a transitional stage in two aspects: entering the stage of the development of skill and knowledge from the stage of positive attitudes

toward intercultural communication, and developing their external outcomes from the internal outcomes for intercultural communication.

   Gap #2: Appropriateness vs. effectiveness. While both appropriateness and effectiveness are the ultimate goals of intercultural communication, it was interesting that NNS graduate students added more weight to appropriateness in communication. The result from the collected data showed that the average score for appropriate communication (Mean=3.98, SD=0.78) was higher than the effective communication score (Mean=3.57, SD=0.81). While effective communication brings about the achievement of valued objectives, appropriate communication indicates avoidance of violating valued rules (Deardorff, 2007; Spitzberg, 1994). In applying these definitions of each concept, NNS graduate students perceived that they were good at avoiding the violation of valued rules but less competent at achieving their goals through communication. This result implies that NNS graduate students tended to deviate from achieving their communication goals, in order not to violate social rules or cultural norms in communicating with culturally different people. Why? What made such a difference between the levels of perception of appropriateness and effectiveness? Two reasons were considered here.

   The first reason was found in NNS graduate students' social adjustment process and the trial and error process they used in previous communicative experiences. An unfamiliar environment and embarrassing episodes resulting from ignorance of social and cultural cues made them more cautious about appropriate communication. According to Adler (1975), in the second and disintegration stage of transitional experience, sojourners find that "[their] own cultural understandings are no longer appropriate and do not bring [their] expected results" (p. 16). In considering the theory of social adjustment, international students might have experienced some incidents or episodes where they made mistakes or used awkward and

inappropriate speech or behavior in an intercultural situation. Throughout the series of trials and errors, they might have gradually become more sensitive to such situations and more cautious about appropriate communication by considering time, place, and occasion. As a result of this constant awareness for appropriate communication, they expressed more strong agreement on items about culturally appropriate communication than on items about effective communication to achieve their goals or solve their problems effectively.

Another reason related to linguistic barriers and the lack of applicative skills. The results of this survey showed that the NNS graduate participants revealed a lower level of confidence about applicative skills than acquisitive skills. The average score from applicative skills (Mean=3.38, SD=0.93) was lower than the score from acquisitive skills (Mean=3.93, SD=0.79). This implies that participants were less competent in the output-related skills for communication including interpreting different signs or languages from different cultures, and speaking and writing in English, as compared to the input-related skills of recognizing cultural differences between their own and other cultures, and listening and reading in English. Because they recognized that they had language barriers and were unfamiliar with social and cultural rules and local expressions or signs in the host culture, they tended to accept and observe situations rather than becoming actively involved in social activities and communicative situations by using the applicative skills.

In this regard, previous research (Cheng, 2000; Liu, 2001; Ren, et al., 2007) already has pointed out the reticence issue of international students. In particular, this applied to Asian students who comprised a large proportion of participants in this study. Further, this issue was exemplified by the observation that some East Asian graduate students tended to raise questions after class rather than during class (S. Kim, 2006). Although S. Kim (2006) explained that

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raising questions in front of the whole class provoked great anxiety, it may be suggested that the anxiety was caused by two reasons: lack of confidence for output-related linguistic and cultural skills; and a perception of NNS graduate students that the questions they wished to raise may have been irrelevant to other students, so it would be inappropriate to risk breaking the flow of the class. These points support the findings and suggest reasons why participants revealed more agreement about appropriate communication than effective communication.

Gap #3: Variances in cultural origins and languages. Perceptions about intercultural communicative competence were different for the variables that were related to students' cultural origin and language. While no significant differences were found among gender, age, marital status, academic disciplines, previous job experiences, years of living in the U.S., and previous intercultural experiences in regard to the overall ICC level, the perception about ICC was found to differ among participants' nationalities. In grouping participants into four groups by native country – India, China, South Korea, and other countries – it was found that students from India (Mean=4.00, SD=0.37) and other countries (Mean=4.03, SD=0.44) had higher perceived levels of intercultural communication than Korean (Mean=3.60, SD=0.43) or Chinese students (Mean=3.72, SD=0.43).

It should be noted that Korean and Chinese students were unique and distinctive in the following three respects: they made up a large part (total 49%) of the sample for the present study; they each used a single native language; and China and Korea have often been cited as countries that valued collectivism in contrast to individualism (Ting-Toomey, 1989). Chinese and Korean students typically have strong social ties with their co-cultural members, often called their ingroup. The term ingroup refers to the "group whose values, norms, and rules are deemed as salient to the effective functioning of the group in the society" (Ting-Toomey, 1989, p. 361).

In previous research, it was found that international students who had strong ties with other co-cultural members had higher personal adjustment levels than students who had fewer social relations from their home countries (Al-Sharideh & Goe, 1998). In looking at the nationality distributions of participants, the nations categorized as "other countries" (n=76, 35%) included Iran (n=9, 4.3%), Turkey (n=4, 1.9%), and many others (n=less than 3, below 1.4%). It is assumed that students who had such a small number of co-cultural friends must have become more active in building social relationships with other cultures. On the other hand, students who had lots of co-cultural fellow students and access to a large ethnic community on campus, such as the Chinese or Korean students association, might have been less active in establishing intercultural relationships and having intercultural interactions.

Although Indian students (n=30, 14.6%) also had a large co-cultural community, they were different from the Korean and Chinese students because many Indian students had more than one native language – not only Hindi, but also Maithli, Tamil, Telugu, Kannada, Telugu, and Marathi. Students with multiple native languages tended to have higher perceived ICC levels (Mean=4.00, SD=0.45) than students who had a single native language (Mean=3.81, SD=0.46). This difference was also statistically significant (t=2.31, $p < .05$). These observations imply that the number of students at the university who had the same cultural origins and a single native language made a significant difference in the level of ICC.

Summary: Instructional design implications for NNS graduate students. In this sub-section, three implications from the major findings were discussed by pointing out the gaps or distances between mind and action, between appropriateness and effectiveness, and among different cultural origins and native languages. The results of this study and the major findings pointed out in this section can be useful to instructional designers and instructors who work

closely with NNS graduate students or who are interested in this group of students. However, the three gaps introduced in this section and perhaps other gaps that were not revealed in this study must be *challenging elements* both to NNS graduate students and to instructional designers and instructors. For NNS graduate students, it is challenging to take action to seek out opportunities to interact with others, to develop their applicative and output-related skills for intercultural communication, and to improve both appropriate and effective communication. These objectives are not achieved easily or immediately, even though students have positive attitudes and a high degree of willingness. To instructional designers and instructors, it is challenging to accept that they cannot see immediately the learning outcomes that they are expecting from NNS graduate students.

Students have different levels of ICC and they may develop their ICC at different speeds. However, connecting such gaps caused by cultural differences and making the gaps to be minimal is the role of the instructional designer. In this context, connecting the gaps is similar to "building bridges" as expressed by Rogers, Graham, & Mayes (2007). They explained that building bridges implied that instructional designers should be more flexible (Rogers, Graham, & Mayes, 2007, p. 210). In addition to being flexible, instructional designers must take on the challenge of implementing diverse strategies for NNS graduate students, to help them study more effectively and achieve their goals. Practical and useful instructional design strategies for NNS graduate students will be discussed in the following section.

Thread #3: Positive Perception about ID strategies for SEL

While the results about NNS graduate students' perceptions about ICC were descriptive, the results regarding instructional design strategies for NNS graduate students were prescriptive in nature. Socially Engaged Learning is a framework based on social theories of learning

introduced in Chapter 2. This study investigated the perceived effectiveness of instructional design strategies for socially engaged learning by NNS graduate students. The major finding was that participants of this study had moderately positive perceptions about the ID strategies for SEL (Mean=3.78, SD=0.54). That is, NNS graduate students agreed that the ID strategies for SEL were effective instructional strategies. In addition to overall perception, detailed implications are discussed within four categories: gradual engagement and active participation, rich cultural context, self-regulation and learning ownership, and integration of communication technology.

Gradual engagement and active participation. Instructional strategies for students' gradual engagement and active participation were found to be important in facilitating NNS graduate students' learning. Most survey participants in this study agreed with the items related to gradual engagement and active participation (Mean=3.93, SD=0.63). These composite scores were higher than the scores from other items related to self-regulation and learning ownership (Mean =3. 74, SD=0.58) and integration of communication tools (Mean=3.52, SD=0.92).

Above all, respondents perceived that they could learn more effectively with greater structure such as step by step guidance (Mean=3.98, SD=0.97) as well as more opportunities for interacting with other students (Mean=3.95, SD=0.9). This finding was supported by previous research conducted by Ku, et al.(2008) who described a successful mentoring program providing to support international doctoral students. The authors stated that the relationship between mentor (including faculty, supervisor, instructor, or coach) and students was vital for international graduate students. The present study, focusing on instructional strategies in the context of class situations, also recommended two important things that instructors or instructional designers could do for NNS graduate students: provide instruction with clearer and

greater structure, and have more opportunities to interact with not only instructors but also other students through reviewing each others' work or teaching each other.

In regard to an increase in opportunities for interacting with other students, group learning and team work was an effective strategy. This strategy was expected to help students experience more intercultural learning as well as learn more effectively. In this study, participants positively perceived group learning and team work (Mean=3.6, SD=1.13); however, they had less positive perceptions about collaborating with culturally different people (Mean=3.47, SD=1.03). Based on this finding, it is recommended that a grouping strategy be carefully considered because some students may have less successful experiences from collaboration. It should be noted that quite a few respondents (n=35, 17.1%) revealed negative perceptions about collaboration with culturally different people. Although Jones, et al. (1994) indicated that, as a general guideline, instructional designers should consider heterogeneous, equitable, and flexible grouping for students' engagement, this finding from the present study suggests analyzing students' preferences, and being more sensitive to their perceptions about collaborative work, in making a decision for instructional design. Guidance for students in the value of collaborative learning and instruction in how to conduct effective groups or teams for learning are also needed.

As another useful instructional strategy, sample cases and models were found to be effective for NNS graduate students. According to Bandura (1977), human thought, affect, and behavior are greatly influenced by observation as well as direct experiences. While such a notion is meaningful for all learners, practical help including the use of appropriate modeling strategies and provision of sample cases or models, is even more effective for NNS graduate students' learning as well as cultural and academic adjustment. The participants of this study strongly

agreed that such a strategy was effective for them to observe, interpret and apply to their own work (Mean = 4.19, SD=0.76). In addition, positive responses for this strategy were more distinctive in the group of Chinese students (Mean=4.27, SD=0.62) and students from various other countries (Mean=4.38, SD=0.74).

Rich cultural context. Instructional strategies emphasizing rich cultural context were also found to be important to facilitate NNS graduate students' learning. Most survey participants in this study agreed with the items related to rich cultural context (Mean=3.93, SD=0.68). The key point in this category is the design of tasks and activities. While the traditional approach to instructional design (i.e., transmissive instruction and focusing on conveying the ideas to learners) emphasized the *design of contents*, contemporary situated, sociocultural, and constructive approaches emphasize the *design of tasks and activities* (Jonassen & Land, 2000). Examples of the latter have been demonstrated in various learning environments including problem-based learning, anchored instruction, cognitive apprenticeship, reciprocal teaching, goal-based learning, project-based learning, constructivist learning environments, and open learning environments (Jonassen & Land, 2000; Land & Hannafin, 2000). Socially engaged learning, the focus of this study, is also consistent with such constructive and student-centered instructional environments in that designing tasks and activities is a key component of the instructional design.

In designing such a task or activity, connections should be made with three components: previous experience, cultural backgrounds, and real world issues. This perspective has been emphasized in the body of social theories of learning, specifically cultural historical activity theory (Engeström, 1987; Leont'ev, 1978). Previous research has emphasized anchoring students' past experiences and cultural historical backgrounds (Engeström, 1987; Leont'ev, 1978), providing rich contextual information (Brown, et al., 1989; Collins, et al., 1989), and using

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authentic tasks and problems (Collins, 1988; Hung & Chen, 2006; Hung, et al., 2006; B. F.

Jones, et al., 1994).Consequently, instructional designers have been advised to spend time not

only analyzing and designing content, but also analyzing the learners for whom they are

designing (Dick, et al., 2005; Gagné, 1965), and the contexts in which learning occurs (Tessmer

& Richey, 1997).

In regard to the survey items related to rich cultural context, participants strongly agreed

with the effectiveness of connecting tasks with their previous experiences (Mean=4.30,

SD=0.81), with their cultural situation (Mean=3.68, SD=1.20), and with real world issues

(Mean=4.15, SD=0.85). It was also found that female students more strongly agreed with the

effectiveness of connecting tasks with previous experiences (t=-2.3, p <.05) and with their

specific cultural situation (t=-2.45, p <.05) than male students. Participants from Architecture

and Urban Studies, Business, and Liberal Arts and Human Science (Mean=4.02, SD=1.09) more

strongly agreed with the importance of the strategy than the participants from Agriculture and

Life Science, Engineering, Natural Resources, and Science (Mean=3.56, SD=1.21; t=2.28,

p <.05). Throughout these findings, one can infer that the impact on the incorporation of cultural

situations into the instructional solutions might differ according to the academic discipline's

characteristics.

Self-regulation and learning ownership. Self-regulation strategies including learners'

goal setting and planning, help-seeking, self-monitoring, self-assessment, and reflection have

been emphasized by many researchers because they impact students' self-efficacy, stimulate

their motivation and engagement, and facilitate their academic achievement (Bandura, 1986;

Hung, et al., 2006; Ormrod, 2007; Schunk, 1984; M. Wang & Kang, 2006). However, contrary to

expectations, NNS graduate students expressed less strong agreement with the effectiveness of

self-regulation strategies and learning ownership (Mean= 3.74, SD=0.58). Relatively many participants revealed an unwillingness to set their own research topics, decide on the working process, and assess the quality of their own work. The collected data indicated that 43 participants (21.1%) disagreed to some extent with the strategy of having the research topic set by themselves rather than given by the instructor; 40 participants (20%) had negative perceptions of the strategy having the working process decided by themselves instead of the instructor; and 52 participants (25.7%) responded negatively to the strategy of being responsible for assessing the quality of their own work.

From these results it may be inferred that NNS graduate students needed more direct help rather than letting them find their own way. Although developing self-regulation ability and having learning ownership were important, the participants preferred a traditional teaching style such as a teacher-centered environment or classes mainly led by instructors. This finding is supported by the fact that they responded with a relatively high level of agreement about direct assistance with topics or coursework that they may not understand (Mean=3.98, SD=0.81). Further, the items regarding getting feedback from instructors had the highest mean scores of all the items about effective ID strategies section of the survey. Specifically, the mean score for immediate feedback was 4.14 (SD=0.81) and the score for detailed feedback was 4.30 (SD=0.79). It is also noteworthy that participants showed a higher preference for detailed feedback than for immediate feedback. This was more distinctive in female students (Mean=4.45, SD=0.75) than male students (Mean=4.21, SD=0.80) (t=-2.13, p <.05).

These findings suggest some implications for instructional designers and instructors in graduate programs. There is a need for NNS graduate students to recognize the importance of developing self-regulation strategies and metacognitive skills and having more learning

ownership and responsibility. At the same time, for those students who are struggling with how to study more effectively in their graduate programs, instructional designers need to suggest and teach appropriate metacognitive skills to those students. In the study conducted by Rogers et al. (2007), a professional designer of instruction for Egyptian students reported that she had experienced some resistance to utilizing several learning approaches as opposed to the lecture-only style, but finally she became successful with her social style of instruction by teaching metacognitive strategies like brainstorming, note-taking and various approaches to creative problem-solving. This example supports the assertion that instructional designers and instructors need to guide students and teach them effective learning strategies and metacognitive skills.

Another implication is that detailed feedback and direct assistance should be considered when teaching NNS graduate students. Because some international students are not familiar with student-led classes or self-assessment, it is recommended that instructional designers and instructors attempt to understand those students' characteristics and guide them in becoming more familiar with new teaching and instructional styles and approaches.

Integration of communication technology. As communication technologies have advanced rapidly, instructional designers and instructors in higher education have incorporated computer mediated communication as alternative forms of learning or used the technologies as supplemental elements of classes. Students have also become increasingly comfortable and familiar with a computer mediated learning environment (Baek & Damarin, 2008). A number of studies have indicated that NNS students can take advantage of computer mediated technologies and the function of the asynchronous learning environment in comparison with other NS students (Baek & Damarin, 2008; Chen, 1999; Hlas, et al., 2008; Morse, 2003; Robbins et al., 2002; Yildiz & Bichelmeyer, 2003). The researchers have recognized that computers and web mediated

environments for NNS students are "linguistically less demanding environments" (Baek & Damarin, 2008, p. 201).

However, the participants of this study responded moderately in favor of the use of computers for communication in learning (Mean=3.45, SD=1.17). All except a few students (n=5, 2.5%) indicated that they had experienced computer-mediated communication; 36 participants (18.6%) disagreed with the effectiveness of using computers for communication. While 167 participants (62.9%) responded positively for synchronous communication (e.g., chatting, conferencing, and face-to-face discussion), 35 participants (17.4%) responded positively for asynchronous communication (e.g., discussion boards and e-mail). These findings did not confirm the assumption about the positive association between the linguistic limitation of NNS students and characteristics of asynchronous communication. The dissimilar results from the previous literature may be due to the fact that most of the participants in this study had a relatively high level of linguistic proficiency and had prepared and spoken English for a relatively long time. In addition, while this study generally investigated the perceptions of participants, previous literature mainly observed participants' patterns of communication and interaction (e.g., number of postings in web-based instruction, number of times speaking in oral discussion). Therefore, it should be noted that the context of this study was different from the contexts of previous studies.

Summary: Instructional design implications for NNS graduate students. In this sub-section, four implications from the major findings were discussed based on four categories of socially engaged learning: gradual engagement and active participation, rich cultural context, self-regulation and learning ownership, and integration of communication tools. Throughout this section, it has been expected that instructional designers and instructors will have an opportunity

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to know their students' preferences about specific instructional design strategies for socially engaged learning. As a model to suggest to NNS graduate students, socially engaged learning is an ideal environment where learners are gradually involved in the rich cultural context, the learner's self-regulation ability is encouraged for active participation, and communication tools are effectively and appropriately integrated in teaching and learning.

Research findings of this study have contributed to verifying the effectiveness of each instructional strategy and to make this model more dynamic for application to NNS graduate students. Students' engagement and participation is a fundamental condition of learning. A great deal of research (Brown, et al., 1989; Lave & Wenger, 1991; Newman, Griffin, & Cole, 1989; Vygotsky, 1978) has emphasized that "learning is sustained through active participation and… basic unit of analysis is not individual cognition, but learners interacting in a group using cultural resources to construct understanding" (McLoughlin, 1999, p. 237). NNS graduate students who participated in this study have strongly agreed with this notion. Observing students' progress and facilitating students' engagement and active participation in not only their learning process but also the community of practice is an important role of instructional designers and instructors. What needs to be provided in facilitating those students includes not only learning content and objects but also well-designed tasks and activities, and appropriate samples and cases. To make tasks, activities, samples, and cases useful to NNS graduate students, instructional designers should connect them with students' cultural background, previous experience, and real world situations. The connection makes the instruction more contextualized and culturally appropriate for the students.

As instructional approaches to facilitate students' engagement and participation, a variety of strategies were introduced and investigated in this study. Those approaches included

instructional scaffolding, collaborative learning with careful grouping strategies, direct assistance, and immediate and detailed feedback. In considering relatively less active characteristics of students in leading their learning process, instructional designers and instructors need to remind their students to take higher responsibility and ownership for their learning; and to teach them how to set their research topics, control their working process, and assess the quality of their own work. Lastly, the use of diverse communication technologies (including synchronous and asynchronous functions), with which NNS students can more effectively communicate with instructors and other students, should be considered based on the nature of the subject matter and the students' needs and preferences.

Instructional Design Implications for Culturally Diverse Students

Socially engaged learning including the instructional design strategies to facilitate students' gradual engagement and active participation, learning in rich cultural context, self-regulation and learning ownership, and integration of communication technologies, is a model or framework suggested to NNS graduate students. However, this framework can be applicable to other groups of students who are culturally diverse because NNS graduate students represent cultural diversity, and instructional design strategies for those students are related to how to deal with such diversity in designing the instruction. Therefore, this section will discuss instructional design implications for culturally diverse students based on the findings of this study as well as previously existing instructional design models and approaches for culturally diverse students. This section will position the present study in the context of instructional design research and practice.

Previous models dealing with cultural issues have indicated culturally responsible, inclusive, pluralistic, and sensitive teaching and instruction (Branch, 1997; Gay, 2002;

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McLoughlin, 1999, 2001; C. Wang & Reeves, 2007; Young, 2008a, 2008b). The researcher of this study agrees with such approaches that previous researchers have identified. Instructional designers should be more aware of cultural factors in learning (Subramony, 2004) and integrate culture in the design of instruction and technology (Young, 2008b) by "[ensuring] pedagogy and curriculum [being] flexible, adaptable, and relevant to students from a diverse range of cultural and language backgrounds" (McLoughlin, 2001, p. 7). Because the ways to integrate culture in the design include two polar extremes "from the generic or culture-neutral, to the specialized or culture-specific" (Young, 2008b, p. 6), instructional designers should be more flexible in making diverse decisions between cultural inclusivity and cultural sensitivity. While cultural inclusivity implies following universally accepted instructional design principles and using culture-neutral design specifications, cultural sensitivity implies being more aware of cultural differences and similarities among students with diverse cultural backgrounds and providing the specialized instruction to meet the unique and particular cultural characteristics.

The findings of this research indicated that it is challenging for instructional designers and instructors to accept that their students have different cultural backgrounds, that students may not understand the instructional designers and instructors or be able to meet their expectations. Therefore, two suggestions to overcome the difficulties and build a bridge between such gaps were considered. First, as previous literature suggested, instructional designers should become flexible by developing intercultural communicative competency. Second, as this present study has addressed, they can incorporate more active approaches with the ID strategies for socially engaged learning.

In regard these two suggestions, Rogers et al. (2007) overarched them and provided useful insights. That is, instructional designers can apply the universal and basic instructional

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design principles, which are similar to the perspective of Branch (1997), as well as build cultural competency with more cultural awareness. Through analysis of qualitative interviews with 12 professionals who had been involved in instructional design for culturally different people, they concluded that:

> there are deeper and perhaps more universal instructional design principles that need to be separated from particular application. At the same time, however, they immediately couple this with an awareness of the need to find out where people are coming from so one can know where and how to build bridges. In addition to explicitly teaching certain meta-cognitive skills, the participants gave other examples of attempts at building bridges include supplementing the instruction with a wider variety of appropriate examples, finding ways to increase learner flexibility, offering language support…(p. 214)

The present study confirmed several strategies that Rogers et al. (2007) stated above and, further, this study added more systematic strategies in socially engaged learning that might contribute to "building the bridges," borrowing their expression (Rogers, et al., 2007, p. 210). Socially engaged learning fits well with these needs to build bridges because this framework is fundamentally based on three social theories of learning that emphasize bridging the gaps between mind and action, between thoughts and behavior, between the individual aspect of learning and social aspect of learning, and between the culturally independent or separable unit and the culturally connected or situated unit.

Contributions of the Study

This study showed the major findings from the perceptions on ICC and effective ID strategies for socially engaged learning. Suggestions for instructional designers and instructors were provided to assist them to teach and guide NNS graduate students more effectively. The

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results from the perceptions on ICC of NNS graduate students can help instructional designers and instructors in higher education to understand, prepare, teach, and guide those students more effectively. That is, NNS graduate students had a moderately high level of ICC, with relatively higher attitudes than other elements such as skill and knowledge; with relatively higher appropriate communication skill than effective communication skill; and with the variance among students' cultural origins and native languages. Also, they had moderately positive perceptions about the instructional design strategies for socially engaged learning; with relatively strong agreement about the importance of gradual engagement and active participation, and rich cultural context; relatively less active characteristics in leading their learning process, assessing the quality of their own work, and taking higher responsibility and ownership for their learning; and relatively diverse perceptions on collaborative learning and working with culturally different people.

In addition to the value of the research findings, the ICC model and instrument, as an analysis tool that were utilized to derive the results, might be useful for future research and applications. This study showed the usefulness of ICC as a lens to better understand target learners and analyze their attitude, knowledge, skills, adaptability/flexibility, and communication in intercultural situations. The result of analysis is an important input for instructional designers to make decisions in preparing and implementing instructions for NNS learners. Although in the typical process of instructional design, learner analysis is conducted at the beginning and it mostly includes students' demographic information, learning style, and prior knowledge (Dick, et al., 2005), this study supports the view that students' ICC should be analyzed systematically and considered not only in the beginning of the ID process but also throughout the whole process

of ID. This perspective is consistent with Thomas, et al. (2002) and Young (2008a, 2009) and it extends the scope of learner analysis more dynamically.

Assessing students' ICC level is meaningful not only for instructional designers, but also students themselves because students are able to reflect on themselves and assess their ability for intercultural communication. Peng and Wang (2009) also agreed that a self-reported type of ICC instrument was useful to assess the ICC level of students and to observe the improvement of ICC by conducting pre-and post-instruction surveys. It was a meaningful progress that this present study developed an instrument based on multiple ICC definitions, concepts, models, and constructs and utilized it in an off-line based higher education context, while Peng and Wang (2009) revised the instrument by modifying Fantini's (2005) YOGA inventory and utilized it with high school students in cross-cultural online instruction.

Further, in considering the growing needs and markets of cross-cultural online learning, as Peng and Wang (2009) applied ICC to online learning, this instrument, as an evolved version of an ICC instrument, can be effectively utilized for assessing online students in the future. As information and communication technology has advanced, a great deal of recent research has been conducted in web-based learning or online learning environments where more and more students experience intercultural communication and cultural differences. Many studies and discussions that deal with cultural issues in IDT in the context of web-based instruction (Henderson, 1996; McLoughlin, 1999, 2001; Rogers, et al., 2007; C. Wang & Reeves, 2007; Young, 2008a, 2008b, 2009) support such trends. Also, in considering that intercultural communication applies not only to Non-native English speaking (NNS) international students but also to other Native English Speaking (NS) and domestic students, future studies can be conducted by investigating the perceptions on ICC of all classifications of graduate students

including NS and NNS, international and domestic students. Therefore, future research and application can expand the assessment of ICC from the boundary of offline to the online environment; and from the focus of NNS students to all students in a specific program.

Above all, instructional design strategies for socially engaged learning provide practical guidelines for instructional designers and instructors. Socially engaged learning, including its four categories, has been theoretically conceptualized based on three social theories of learning: social learning theory (Bandura, 1977), explaining an individual's social and psychological functioning; sociocultural theory (Vygotsky, 1978) and activity theory (Engeström, 1987; Leont'ev, 1978), explaining social and cultural impacts on learning; and situated learning theory (Brown, et al., 1989; Lave & Wenger, 1991). This study contributed to the field of instructional design and technology by synthesizing the theoretical constructs and verifying the effectiveness of the synthesized framework through the survey targeting NNS learners.

Lastly, in providing instructional design implications for culturally diverse students, this study suggested that instructional designers should be flexible between cultural inclusivity and sensitivity, and try to implement more actively the ID strategies for socially engaged learning. These suggestions made to instructional designers become big challenges; thus, programs in instructional design and technology need to consider including such content in the curriculum and instruction for training instructional designers to develop their cultural competency. The ICC model and instrument developed in this study can probably be useful for instructional designers themselves to assess and develop ICC.

Given that ICC is required to not only students but also instructional designers and instructors who are working with culturally diverse students, future research needs to focus on developing intercultural competences of instructional designers and instructors so that they have

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improved awareness of and flexibility with cultural differences, and prepare culturally inclusive, sensitive, pluralistic, and responsive instruction. In the contrast to previous research conducted by Rogers et al. (2007), whose investigation of cultural competencies of instructional designers and their lived experiences via qualitative research provided useful insights to this study, the present study mainly focused on the perceptions of intercultural communicative competencies of international students via quantitative research and can suggest an evolution for future research. Based on a natural synergy from the two different approaches and valuable resources, this study suggests investigating and describing the cultural competences of instructional designers more systematically within the sub categories that this study has utilized: attitude, knowledge, skill, and adaptability/flexibility and communication. Such future research can more effectively contribute to the field of instructional design and technology through practical guidelines to develop intercultural communicative competences and through development of more capable instructional designers in their cultural competencies.

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Dear Virginia Tech International Graduate Students,

I am conducting a study on instructional design implications for international graduate students that are non-native speakers of English. Therefore, if your native language is not English, I invite you to participate in my research. If you would like to participate in this study, please follow the link:

https://survey.vt.edu/survey/entry.jsp?id=1266420528403.

It will take **approximately 10-15** minutes to complete. Your responses will be very helpful for instructors and instructional designers to understand better about your communication ability and perceptions about effective instructional strategies. This study has been approved by Virginia Tech Institutional Review Board (IRB # 10-077). Your responses will be confidential and anonymous. Please refer to the informed consent form at

https://filebox.vt.edu/users/ypark78/consent.html.

It would be most appreciated if you would complete this survey prior to **March 5, 2010**.

Sincerely,

Yeonjeong Park, Ph.D. Candidate (ypark78@vt.edu),
Instructional Design and Technology,
Department of Learning Sciences and Technologies,
Virginia Polytechnic Institute and State University

Survey about Intercultural Communication and Effective Instructional Strategies

Instruction: The purpose of this study is to investigate instructional design implications for non-native English speaking graduate students. For this purpose, this survey will ask about (1) background information, (2) your abilities of intercultural communication and (3) effective instructional strategies for you to be more socially engaged in learning. This survey will take approximately **15 minutes** to complete. Please answer the following questions honestly.

Part 1 Respondent Background Information

Please complete the following questions regarding your personal background.

1. Gender: ○ Male ○ Female

2. Marital status: ○ Single ○ Married ○ Other: ____

3. Degree that you are pursuing currently: ○ Master ○ Doctorate ○ Other: _____

4. What is your current age?

   ○ below 20 ○ 20 to 29 ○ 30 to 39 ○ 40 to 49 ○ 50 to 59 ○ above 60

5. What is your nationality?

6. Do you have more than one native language? ○ Yes ○ No

7. Please indicate your native language(s). _____

8. What college are you in?

   ○ Agriculture and Life science ○ Architecture and Urban Studies ○ Business

   ○ Engineering ○ Liberal Arts and Human Sciences ○ Natural Resources ○ Science

9. Please indicate your major (program name). _____

10. Do you have a previous job experience? ○ Yes ○ No

11. If yes, how long have you worked (studied) in your professional field?

    ○ 0-3 years ○ 3-6 years ○ 6-9 years ○ 9-12 years ○ 12-15 years ○ more than 15 years

12. How long have you been in the U.S.?

    ○ less than 1 year ○ 1-2 years ○ 2-3 years ○ 3-4 years ○ 4-5 years ○more than 5 years

13. Prior to coming to the U.S., did you have English language education? ○Yes ○ No

14. Prior to coming to the U.S., did you have any significant experiences with other cultures outside of your country?(e.g., traveling more than one month, living outside of your country, communicating with foreign friends relatively for long period, etc.) ○ Yes ○ No

15. If yes, where and how long did you have such experiences? _____

Part 2. Intercultural Communication

The following questions will ask your abilities when you communicate with culturally different people and adjust to new environment as you study in the U.S. Please rate yourself honestly in each of the areas below.

0	1	2	3	4	5
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

Attitude (I am trying to…)	
1. respect people from different cultures including their language, values, history and traditions.[1,3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
2. not judge people because they are from a different culture. [1,2]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
3. accept that there are some times that I may not always understand differences between cultures.[1]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
4. look for opportunities to interact with culturally different people.[2]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
Skills (I am able to…)	
5. recognize cultural differences between my own and other cultures.[1]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
6. listen to long speech and read articles in English without much effort or difficulty.[4]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
7. interpret different signs (e.g., gesture, visual marks) or languages (e.g., local expressions or phrases) from different cultures.[3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
8. speak and write subjects related to my area of study in English without difficulties.[4]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
Awareness / Knowledge (I am aware of … or I understand …)	

9. other's cultural characteristics (e.g., worldview, norms, customs, taboos, greetings, etc.)[1,3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
10. the important history and socio-political factors that have shaped the relationship of my own and other countries [2,3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
11. the value of cultural diversity.[1]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
12. the social characteristics of language.[1]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
Adaptability / Flexibility (I am able to …)	
13. use appropriate strategies for adjusting to the new cultural environment. [3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
14. change my own behavior to relate to what I learn about new culture. [3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
15. consider other's feeling, emotion, situation, or thoughts and use the consideration for effective communication. [1,5]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
16. reflect upon my interaction with others and use the reflection for future communication and interactions. [1,3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
Communication (I am able to …)	
17. achieve my goals by communicating effectively with culturally different people. [1,6]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
18. solve problems effectively when miscommunication or misunderstanding occurs.[1]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
19. avoid violating important rules in the particular culture.[1,6]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5
20. interact appropriately in a variety of situations within the new culture.[3]	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5

21. Can you identify other abilities that are not listed above that you feel more important for non-native English speaking graduate students?

Resources:
1. Deardorff, D. K. (2007). A model of intercultural competence and its implications for the foreign language curriculum. In S. Wilkinson (Ed.), AAUSC 2006: Insights from study abroad for language programs (pp. 86-98). Boston, MA: Thomson Heinle.
2. Byram, M. (1997). Teaching and assessing intercultural communicative competence. Clevedon: UK: Multilingual Matters Ltd.
3. Fantini, A. E. (2000). A central concern: Developing intercultural competence. Retrieved September 3, 2009: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.117.8512&rep=rep1&type=pdf#page=33
4. Common European Framework of Reference for language
5. Kim, Y. Y. (1988). Communication and cross-cultural adaptation: an integrative theory. Philadelphia, PA: Multilingual Matters Ltd.
6. Spitzberg, B. H. (1994). A model of intercultural communication competence. In L. A. Samovar & R. E. Porter (Eds.), Intercultural communication: A reader (7th ed., pp. 347-359). Belmont, California: Wadsworth Publishing Company.

Part 3. Effective Instructional Strategies

The following questions will ask about the effectiveness of instructional strategies that you have experienced in your classes as a graduate student. Please rate yourself in each of the areas below. If you have not experienced one of the strategies listed below, then select N/A (not applicable).

0	1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	N/A

I can learn more effectively …	
1. with greater structure (e.g., step by step guidance) provided by the instructor.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
2. with opportunities for interacting with other students through reviewing each others' work or teaching each other.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
3. with sample cases or models to observe, interpret, and apply them to my own work.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
4. with group learning or team work rather than individual work.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
5. with activities or projects that relate to real world issues.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
6. when the tasks are connected to my previous experiences.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
7. when the tasks are relate to my specific cultural situation.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
8. when an instructor provides detailed background information such as the history, origin, or related stories to explain some concepts or words.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
9. when I collaboratively work with other learners from different cultural backgrounds.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
10. when the research topic is set by myself rather than given by the instructor.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
11. when the working process is decided by myself rather than given by the instructor.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
12. when I am responsible for assessing the quality of my own work.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
13. when I can get direct assistance with topics or coursework that I may not understand.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6

14. when I get immediate feedback from my instructors.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
15. when I get detailed feedback from my instructors.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
16. when I use the computer to communicate with my instructors and other students.	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6
17. when I participate in synchronous (same time) environment (e.g., chatting, conferencing, and face-to-face discussion) rather than asynchronous environment (across time) environment (e.g., discussion boards and e-mail)".	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐5 ☐6

18. Do you have other strategies that you think of effective for your learning, studying, and communicating with others? If so, please specify what kind of instructional strategies have been effective for you.

Thank you for your time and participation.
All of your responses will be kept confidential and only summary results
will be utilized for the study.

If you have any questions or want to participate in any follow-up studies in relation to this survey
please feel free to contact Yeonjeong Park (ypark78@vt.edu).

-End-

Appendix B
Cover Letter and Questions for Expert Review

(Perspective of Instructional Design)

Dear ⎯⎯⎯⎯⎯⎯⎯ ,

Thank you for agreeing to review my survey instrument for the study on instructional design implications for Non-native English Speaking (NNS) international graduate students. One of the procedures for my research involves an "expert review" in order to improve the validity and clarity of the survey instrument. As an expert in instructional design area, I would like you to review the attached survey instrument and provide helpful comments for the improvement of this instrument.

The subject of this survey is NNS international graduate students who are currently studying in Virginia Tech graduate programs. Since English is not their native language, these students face linguistic limitations. The cultural diversity presents additional challenges. Previous research has indicated they struggle with socially and culturally appropriate communication, reveal a lack of understanding cultural context, fear group discussion, and often express uncertainty in communicating with other English speakers.

Given this situation, this study aims to help instructional designers and instructors know more about these students' ability about intercultural communication and prepare more effective instructional design strategies for these students to be more socially engaged and successfully study in U.S. Existing instructional design models also highlight the importance of analyzing target learners' characteristics and ability. In this regard, this study surveys NNS international graduate students' perception on (1) their Intercultural communicative competence (ICC) and (2) instructional design strategies for socially engaged learning.

In the perspective of instructional design, please review the developed survey items. I am attaching (1) questions for the expert review, (2) the survey instrument, and (3) resources utilized for developing the instrument. The third attachment is information only to explain how the survey questions were derived from and not something that you need to comment on. If you have any questions, please feel free to contact me anytime. I do really appreciate your time and valuable comments.

Sincerely,

Yeonjeong Park

Attachment 1: Questions for expert review
Attachment 2: Survey instrument for NNS graduate students (See the Appendix A)
Attachment 3: Resources utilized for developing survey instrument (See the Appendix C)

Questions for expert review

(Perspective of Instructional Design)

1. Do you think that the survey items (attitude, skills, knowledge, adaptation/flexibility, and communication ability in intercultural situation) in Part 1consist of important factors that instructional designers should consider as a step of learner analysis? If you have any other thoughts related to this issue, please describe them.

2. Do you think that the survey items in Part 1 are well developed with elements that instructional designers should know in related to NNS graduate students' intercultural communicative competence? If not, please identify the items and your thoughts.

3. Do you think the survey items in Part 2 reflect instructional strategies for socially engaged learning in referring to its theoretical backgrounds and indicators of engaged learning (see the attachment #3)? If not, please identify the items and your thoughts.

4. Do you think that the survey items in Part 2 are well developed with strategies for NNS graduate students to be socially engaged and successfully study in U.S. graduate program? If not, please identify the items and provide your thoughts.

5. Do you think this survey instrument can be a useful tool for instructional designers who are dealing with NNS graduate students to prepare more effective instructions for them? If you have any suggestions related to this issue, please provide helpful comments.

6. Please provide your overall thoughts about this survey instrument. Your suggestions will be very helpful to make an improvement on the quality of this instrument.

Thank you so much for your time and valuable comments!

Cover Letter and Questions for Expert Review

(Perspective of Foreign Language and International Education)

Dear _____,

Thank you for agreeing to review my survey instrument for the study on instructional design implications for Non-native English Speaking (NNS) international graduate students. One of the procedures for my research involves an "expert review" in order to improve the validity and clarity of the survey instrument. As an expert in the area of foreign language and international education, I would like you to review the attached survey instrument and provide helpful comments for the improvement of this instrument.

The subject of this survey is NNS international graduate students who are currently studying in Virginia Tech graduate programs. Since English is typically not their native language, these students face linguistic limitations. The cultural diversity presents additional challenges. Previous research has indicated they struggle with socially and culturally appropriate communication, reveal a lack of understanding cultural context, fear group discussion, and often express uncertainty in communicating with other English speakers.

Given this situation, this study aims to help instructional designers and instructors know more about these students' ability about intercultural communication and prepare more effective instructional design strategies for these students to be more socially engaged and successfully study in U.S. For this purpose, this study surveys NNS international graduate students' perception on (1) their intercultural communicative competence (ICC) and (2) instructional design strategies for socially engaged learning.

In the perspective of an expert about international students, please review the survey instrument. I am attaching (1) questions for the expert review, (2) a survey instrument, and (3) resources utilized for developing the instrument. The third attachment is information only to explain how the survey questions were derived from and not something that you need to comment on. If you have any questions, please feel free to contact me anytime. I do really appreciate your time and valuable comments.

Sincerely,

Yeonjeong Park

Attachment 1: Questions for expert review
Attachment 2: A survey instrument for NNS graduate students (See the Appendix A)
Attachment 3: Resources utilized for developing survey instrument (See the Appendix C)

Questions for expert review

(Perspective of Foreign Language and International Education)

1. How do you define intercultural communicative competence? Do you think that the survey items in Part 1 reflect the each sub factor indicated in the illustrated model (see the attachment #3)? If not, please identify the items and your thoughts.

2. Do you think that the survey items in Part 1 are well developed to measure NNS graduate students' intercultural communicative competence? If not, please identify the items and your thoughts.

3. Do you think that the survey items are well developed with the instructional design strategies that might be helpful for NNS graduate students? If not, please identify the items and provide your thoughts.

4. Do you think that there are more strategies that instructional designers or instructors who are dealing with NNS graduate students should consider importantly? If so, please identify them with the reasons.

5. Do you think the survey items are clearly described in order for NNS graduate students to understand the meaning? If not, please identify the unclear parts.

6. Please provide your overall thoughts about this survey instrument. Your suggestions will be very helpful to make an improvement on the quality of this instrument.

Thank you so much for your time and valuable comments!

**Resources utilized for developing the survey**

Part 2

The following introduces how survey questionnaire have been developed based on the previously developed models, indicators, definitions, and instruments.

1) Definitions of Intercultural communication competence (ICC)

- The qualities required of the sojourner (Byram, 1997, p. 2)
- An extended concept of communicative competence (Hymes, 1972)
- The ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes (Deardorff, 2007, pp. 87-88)
- A set of complex abilities for those who enter a second language and culture to interact successfully with people who have different linguistic and cultural backgrounds (Fantini, 2000, 2006)

2) Models and dimensions of ICC

- Factors in intercultural communication (Byram, 1997)
- Process model of intercultural competence (Deardorff, 2007)
- A model of intercultural communication competence (Spitzberg, 1994)
- Host communication competence (Y. Kim, 1988)
- A+ASK (Awareness + Attitude, Skill and Knowledge) model (Fantini, 1999)
- In referring to multiple models and dimensions of ICC, a model is illustrated for this study in the following:
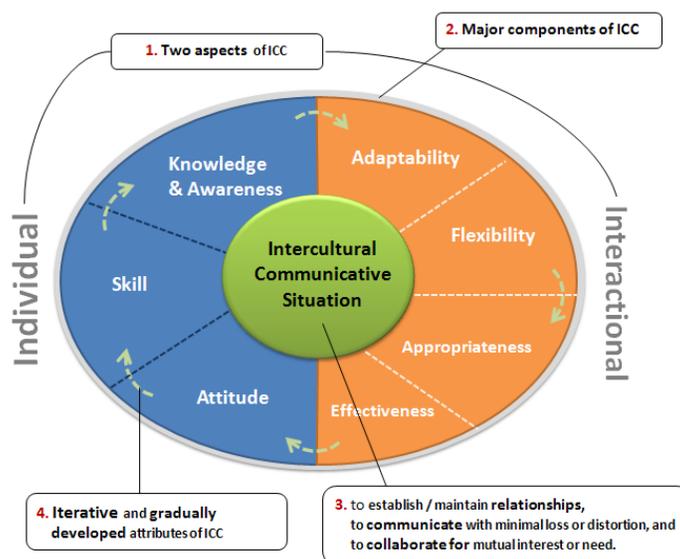
3) Dimensions, factors, descriptions, and items

The survey items were paraphrased or modified from an existing assessment tool (YOGA form) developed by Fantini (2000) and descriptions aggregated from multiple resources (Byram, 1997; Deardorff, 2007; Y. Kim, 1988; Spitzberg, 1994).

Dimensions	Factors	Descriptions (Sources)	Survey Items
Attitude	Respect & Openness	• Valuing other cultures (Deardorff, 2007) • Open toward intercultural learning and to people from other cultures (Deardorff, 2007) • Withholding judgment (Byram, 1997; Deardorff, 2007)	1. I am trying to respect people from different cultures including their language values, history, and traditions. (Deardorff, 2007; Fantini, 2000). 2. I am trying to not judge people because they are from a different culture. (Byram, 1997; Deardorff, 2007).
	Curiosity & Discovery	• Tolerating and engaging ambiguity (Deardorff, 2007) • Willing to seek out or take up opportunities to engage with otherness (Byram, 1997)	3. I am trying to accept that there are some times that I may not always understand differences between cultures. (Deardorff, 2007). 4. I am trying to look for opportunities to interact with culturally different people (Byram, 1997).
Skills	Acquisitive [input]	• Acquiring new knowledge of a culture and cultural practices (Byram, 1997) • Listening, observing, and evaluating (Deardorff, 2007)	5. I am able to recognize cultural differences between my own and other cultures (Deardorff, 2007). 6. I am able to listen to long speech and read articles in English without much effort or difficulty (CEFR).
	Applicative [output]	• Interpreting a document or event from another culture (Byram, 1997) • Explain it and relate it to documents or events from one's own (Byram, 1997) • Analyzing, interpreting, and relating (Deardorff, 2007)	7. I am able to interpret different signs (e.g., gesture, visual marks) or languages (e.g., local expressions or phrases) from different cultures (Fantini, 2000). 8. I am able to speak and write subjects related to my area of study in English without difficulties (CEFR).
Knowledge & Awareness	Cultural knowledge	• Understanding other's world views (Deardorff, 2007) • Knowing historical and contemporary relationships between one's own and target countries (Byram, 1997) • Understanding the value of cultural	9. I know other's cultural characteristics (e.g., worldview, norms, customs, taboos, greetings, etc.) (Deardorff, 2007; Fantini, 2000). 10. I know the important historical and socio-political factors that have shaped the relationship of my own and other countries. (Byram, 1997; Fantini, 2000).

|			
		diversity (Deardorff, 2007)	
	Sociolinguistic knowledge	• Knowing the relation between language and meaning in social context (Deardorff, 2007) • Understanding the role and impact of culture and the impact of situational, social, and historical contexts involved (Deardorff, 2007)	11. I know the value of cultural diversity (Deardorff, 2007). 12. I know the social characteristics of language.(Deardorff, 2007).
Internal Outcome	Adaptability	• Adjustment to new cultural environment (Deardorff, 2007; Y. Kim, 1991) • Ability to adapt to varying intercultural communication and learning styles (Deardorff, 2007)	13. I am able to use appropriate strategies for coping and adjusting to the new cultural environment (Fantini, 2000). 14. I am able to change my own behavior to relate to what I learn about new culture (Fantini, 2000).
	Flexibility	• Cognitive ability to switch frames from etic to emic and back again (Deardorff, 2007) • Mental ability to deal with ambiguity and unfamiliarity (Y. Kim, 1988)	15. I am able to consider other's feeling, emotion, situation, or thoughts and use the consideration for effective interactions. (Fantini, 2000; Y. Kim, 1988). 16. I am able to reflect upon my interaction with culturally different people and use the reflection for future communication and interactions (Deardorff, 2007; Fantini, 2000).
External Outcome	Effective communication	• Achievement of valued objectives (Deardorff, 2007; Spitzberg, 1994)	17. I am able to achieve my goals by communicating effectively with culturally different people (Deardorff, 2007; Spitzberg, 1994). 18. I am able to solve problems effectively when miscommunication or misunderstanding occurs. (Deardorff, 2007).
	Appropriate communication	• Avoidance of violating valued rules (Deardorff, 2007; Spitzberg, 1994)	19. I am able to avoid violating important rules in the particular culture (Deardorff, 2007; Spitzberg, 1994). 20. interact appropriately in a variety of situations within the new culture (Fantini, 2000).
Etc.			21. Can you identify other abilities that are not listed above that you feel more important for non-native English speaking graduate students?

Part 3

The following introduces what socially engaged learning is, what theoretical backgrounds are based on, and what indicators are referred to the development of this survey instrument.

1) Definition of socially engaged learning

A learning environment where learners are gradually involved in the rich cultural context, learner's self-regulation ability is encouraged for active participation, and communication tools are effectively and appropriately integrated in the intercultural learning situation. (It was defined by the researcher based on the understanding of social theories of learning.)

2) Theoretical backgrounds

- Social learning theory (Bandura, 1977) explaining an individual's social and psychological functioning
- Sociocultural theory (Vygotsky, 1978) and cultural historical activity theory (Engeström, 1987; Leont'ev, 1978) explaining social and cultural impacts on learning
- Situated learning theory (Brown, et al., 1989; Lave & Wenger, 1991) emphasizing the effect of gradual involvement in the specific community of practice.
- In reviewing commonalities of social theories of learning, socially engaged learning constructs four key points: gradual engagement, rich cultural context, self-regulation ability, and integration of communication tools.
- The flow of theoretical backgrounds and notions of socially engaged learning is illustrated in the following.

Theoretical Backgrounds (Social Theories of Learning)

Social Learning Theory

Individual's social & psychological functioning (Bandura, 1977)
- Reciprocal determinism
- Observational learning

Socio Cultural & Activity Theory

Learning as a profoundly social process (Vygotsky, 1978; Leont'ev, 1978; Engeström, 1987)
- Zone Proximal Development
- Mediation of cultural artifact
- Instructional scaffolding
- Reciprocal teaching

Situated learning theory

Learning in context that reflects the way the knowledge will be useful in real world (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991)
- Legitimate peripheral participation
- Community of Practice
- Cognitive apprenticeship
- Anchored instruction

Socially Engaged Learning

Gradual Engagement & Active Participation

Learners move from observation (Bandura, 1977), to legitimate peripheral participation(Lave and Wenger, 1991) to full participation.

Rich Cultural Context

Learning occurs effectively in a rich cultural and situational context. (Brown, Collins, and Duguid, 1989)

Self-Regulation Ability

Learner's self-regulation ability is encouraged for active participation.

Integration of Communication Tools

Learning is mediated by tools (Vygotsky, 1978) including language, communication technologies, and cultural artifacts.

3) Indicators of engaged learning

As a conceptual framework of socially engaged learning, the researcher referred to the indicators of engaged learning. The following table presents the summary of the literature.

Jones, Valdez, Nowakowski, & Rasmussen (1994)	Hung, Tan & Koh (2006)	Wang and Kang (2006)

• Vision of learning
  - Responsible for learning
  - Strategic
  - Energized by learning
  - Collaborative
• Tasks
  - Authentic
  - Challenging
  - Multidisciplinary
• Assessment
  - Performance-based
  - Generative
  - Seamless and ongoing
  - Equitable
• Instructional Model
  - Interactive
  - Generative
• Learning Context
  - Collaborative
  - Knowledge-building
  - Empathetic
• Grouping
  - Heterogeneous
  - Equitable
  - Flexible
• Teacher Roles
  - Facilitator
  - Guide
  - Co-learner/ Co-investigator
• Student Roles
  - Explorer
  - Cognitive apprentice
  - Teacher
  - Producer
	• Problem
	  - Ill-structured like real life
	  - Relevant learning issues
	  - Linking knowledge and skills of different disciplines
	• Ownership
	  - Students have their own learning goal,
	  - are engaged in all the different aspects of the inquiry process, and
	  - need to know how to break down the problem
	• Collaboration
	  - Students could be working in groups,
	  - divide their projects up into respective roles and sub-tasks, and
	  - can account to each other on the work done.
	• Monitoring
	  - holistic which emphasis on process
	  - self-regulatory processes
	  - similar to multiple evaluation in-situ
	• Experts
	  - well guided inquiry/problem-solving framework
	  - provide mediating tools and techniques
	  - give sufficient appropriate support
	  - opportunities for students to play multiple roles
	• Tools
	  - open communication tools between the students, teachers, and experts
	  - modeled after those used by experts
		• Cognitive
		  - Self-regulated learning
		  - Ownership of learning
		  - Generative learning
		  - Knowledge construction
		• Emotional
		  - Feeling confident
		  - Feeling secure
		  - Feeling comfortable
		  - Feeling curious
		• Social
		  - Sharing resources and information
		  - Cohesiveness
		  - Acceptance
		  - Collaborative learning

3) Categories, strategies, and items

The survey items are derived from the theoretical backgrounds of socially engaged learning and indicators of engaged learning introduced above. The following table demonstrates the alignment of each category, instructional design strategies for socially engaged learning, and descriptions for survey items.

Categories	Instructional Design Strategies for Socially Engaged Learning	Descriptions for survey items *I can learn more effectively...*
Gradual engagement and active participation	• Using instructional *scaffolding* (Collins, et al., 1989) • Making mutual *engagement* (Wenger, 1998) through *peer reviewing and reciprocal teaching* (Vygotsky, 1978) • Providing appropriate *models* and successful cases (Bandura, 1977) • Facilitating frequent *social interactions* through the *collaboration* in a small group (Vygotsky, 1978)	1. with greater structure (e.g., step by step guidance) provided by the instructor.
		2. with opportunities for interacting with other students through reviewing each others' work or teaching each other.
		3. with sample cases or models to observe, interpret, and apply them to my own work.
		4. with group learning or team work rather than individual work.
Rich cultural context	• Using *authentic* tasks and problems (Collins, 1988; Hung & Chen, 2006; Hung, et al., 2006; B. F. Jones, et al., 1994) • Anchoring student's *previous experiences and cultural historical backgrounds* (Engeström, 1987; Leont'ev, 1978) • Providing rich *contextual* information (Brown, et al., 1989; Collins, et al., 1989) • Making *diverse, equitable, and flexible* learning	5. with activities or projects that relate to real world issues.
		6. when the tasks are connected to my previous experiences.
		7. when the tasks are relate to my specific cultural situation.
		8. when an instructor provides detailed background information such as the history, origin, or related stories to explain some concepts or words.

	environment (Hung, et al., 2006; B. F. Jones, et al., 1994)	9. when I collaboratively work with other learners from different cultural backgrounds.

Self-regulation and learning ownership	• Requiring high *responsibility* for and *ownership of* learning (Bandura, 1986; Hung, et al., 2006; M. Wang & Kang, 2006)
	• Encouraging appropriate *meta-cognitive strategies* (M. Wang & Kang, 2006)
	  o Goal setting and planning
	  o Help-seeking
	  o Self- monitoring /evaluating/reflecting (Hung, et al., 2006)
		10. when the research topic is set by myself rather than given by the instructor.

		11. when the working process is decided by myself rather than given by the instructor.
		12. when I am responsible for assessing the quality of my own work.
		13. when I can get direct assistance with topics or coursework that I may not understand.
		14. when I get immediate feedback from my instructors.
		15. when I get detailed feedback from my instructors.
Integration of communication technologies	• Using computer-*mediated communication* for collaborative knowledge construction tool (Jonassen, 2000; Jonassen, et al., 1995) • *Utilizing asynchronous tools* for effective communication and ensuring enough time to *reflect and articulate* (Hlas, et al., 2008)	16. when I use the computer to communicate with my instructors and other students.
		17. when I participate in synchronous (same time) environment (e.g., chatting, conferencing, and face-to-face discussion) rather than asynchronous environment (across time) environment (e.g., discussion boards and e-mail).
Etc.		18. Do you have other strategies that you think of effective for your learning, studying, and communicating with others? If so, please specify what kind of instructional strategies have been effective for you.

-End-

VirginiaTech

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Institutional Review Board
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Blacksburg, Virginia 24061
540/231-4991 Fax 540/231-0959
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www.irb.vt.edu
FWA00000572 (expires 6/13/2011)
IRB # is IRB00000667

DATE: February 10, 2010

MEMORANDUM

TO: David (Mike) Moore
Yeon Jeong Park
Barbara B. Lockee

FROM: David M. Moore

SUBJECT: **IRB Exempt Approval:** "Instructional Design Implications for Non-native English Speaking Graduate Students: Perceptions on Intercultural Communicative Competencies and Instructional Design Strategies for Socially Engaged Learning", IRB # 10-077

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status, CFR 46.101(b) category(ies) 2.

Approval is granted effective as of February 10, 2010.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.

2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE UNIVERSITY AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

Text for Informed Consent Form for Survey Participant

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants in Research Projects Involving Human Subjects

Title of Project: **Instructional Design Implications for Non-native English speaking graduate students: Perceptions on Intercultural Communicative Competences and Instructional Design Strategies for Socially Engaged Learning**

Investigator(s): Yeonjeong Park, School of Education, Virginia Tech

Research Advisor(s): Dr. David M. Moore and Dr. Barbara B. Lockee, School of Education, Virginia Tech

I. Purpose of this project

The purpose of this study is to describe Non-native English speaking (NNS) graduate students' characteristics and to suggest effective instructional design strategies for them to be more socially engaged and successful in their studies. This study focuses on investigating the perceptions held by NNS graduate students regarding their intercultural communicative competence (ICC) and effective instructional strategies for socially engaged learning.

II. Procedures

This study will be conducted online at a time convenient to you. In addition to reading this form and submitting your consent to participate in this study, you are encouraged to keep a copy of it for your records. It is estimated that you will be able to complete this survey in 15 to 20 minutes. After providing consent, you will be presented with the survey which consists of three parts: 1) background information, 2) intercultural communicative competence, and 3) instructional design strategies for socially engaged learning. Upon submitting this survey, your participation will be complete.

III. Risks

There are no anticipated risks to you as a result of participating in this study.

IV. Benefits

Findings from this study could benefit instructors and instructional designers by understanding your perceptions on intercultural communicative competences and instructional strategies for socially engaged learning. Further, this study could benefit you and other NNS graduate students by reflecting upon your intercultural communicative competences and effective instructional and learning strategies for you. The result of this study may serve to influence future implementations of instructional design for NNS graduate students. However, no promise or guarantee of benefits is being made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

The only people who will have access to the data collected from this study will be the investigator and the research advisors. All study data will be kept in a secure location by the investigator. Your participation in this study will be completely anonymous and confidential. It is possible that the Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

VI. Compensation

You will not receive financial compensation or extra credit for your participation in this study. This is strictly voluntary participation.

VII. Freedom to Withdraw

Your participation in this research project is voluntary. You are free to withdraw from the study at any time without penalty. You are free not to answer any questions that you don't want to answer. You are free to end the survey at any time. There may be circumstances under which the researcher may determine that a subject should not continue as a subject.

VIII. Participant's Responsibilities

I voluntarily agree to participate in this study. I have the responsibilities: to 1) submit this informed consent form, 2) fill out survey that follows, and 3) submit the survey once it is done.

IX. Subject's Permission

I have read this Informed Consent Form and conditions of this project. By clicking the "Provide Consent" button below, I have had all of my questions answered, agree to participate in this study, and accept that my consent will be electronically supplied to the researcher to document my participation I this study.

> Provide Consent

Should I have any pertinent questions about this research or its conduct, and research participants' rights, and whom to contact in the event of a research-related injury to the participant, I may contact:

Investigator: Yeonjeong Park, ypark78@vt.edu, 540/808-7948
Faculty Advisors: Dr. David Mike. Moore, moorem@vt.edu, 540/231-2346
                Dr. Barbara B. Lockee, lockeebb@vt.edu, 540/231-9193
David M. Moore, moored@vt.edu, 540/231-4991
Chair, Virginia Tech Institutional Review Board for the Protection of Human Subjects
Office of Research Compliance
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, VA 24060

Survey Invitation Letter via Listserv

1) First e-mail

Park, Yeonjeong

1. PARTICIPANTS WANTED FOR INTERNATIONAL STUDENT'S DISSERTATION RESEARCH 2. INTERNATIONAL HONOR SOCIETY INVITATION

1. PARTICIPANTS WANTED FOR INTERNATIONAL STUDENT'S DISSERTATION RESEARCH A VT doctoral student is conducting a study on instructional design implications for international graduate students who are non-native speakers of English. International students whose native language is not English are invited to participate in this research project by completing a short survey at:
https://survey.vt.edu/survey/entry.jsp?id=1266420528403. The survey takes approximately 15 minutes to complete. Your responses will be very helpful for instructors and instructional designers to better understand your communication ability and perceptions about effective instructional strategies. This study has been approved by the VT Institutional Review Board (IRB # 10-077). Your responses will be kept confidential and anonymous. Please refer to the informed consent form at https://filebox.vt.edu/users/ypark78/consent.html. Please complete this survey prior to March 5, 2010. For further information, contact Yeonjeong Park at ypark78@vt.edu.

2. INTERNATIONAL HONOR SOCIETY INVITATION International graduate students are invited to apply for membership in the Gamma Omega chapter of Phi Beta Delta, the first honor society dedicated to recognizing scholarly achievement in international education. Phi Beta Delta's goals are to:
- recognize the scholarly achievement of international students and scholars, U.S. students who have studied abroad, and faculty and staff who are involved in international activities;
- advance the development of academic-based international programming;
- provide a network on each campus for faculty, staff, and international students involved in international endeavors; and,
- extend the network of members in chapters worldwide.
Membership opportunities are extended to individuals who have demonstrated scholarly achievement in the international arena.

The VT chapter is looking for new members who are willing to help expand program activities and work with special events, public relations, awarding of scholarships and recognitions, and membership development. Please consider this opportunity to become involved in this unique organization and contribute to the internationalization of Virginia Tech. For more information, visit http://www.oired.vt.edu/PBD/index.htm, or contact contact Betty Watts at bettyw@vt.edu. Application deadline: March 3, 2010.

Please contact me if you have any questions about these announcements.

Regards,

Monika
Monika Gibson
Director of Student Services
Graduate School 0325
117 Graduate Life Center at Donaldson Brown Virginia Tech Blacksburg, VA 24061
Phone: 540.231.4558
Fax: 540.231.3714

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2) Second reminder e-mail

PARTICIPANTS WANTED FOR INTERNATIONAL STUDENT'S DISSERTATION RESEARCH A VT doctoral student is conducting a study on instructional design implications for international graduate students who are non-native speakers of English. International students whose native language is not English are invited to participate in this research project by completing a short survey at:
https://survey.vt.edu/survey/entry.jsp?id=1266420528403. The survey takes approximately 15 minutes to complete. Your responses will be very helpful for instructors and instructional designers to better understand your communication ability and perceptions about effective instructional strategies. This study has been approved by the VT Institutional Review Board (IRB # 10-077). Your responses will be kept confidential and anonymous. Please refer to the informed consent form at https://filebox.vt.edu/users/ypark78/consent.html. The submission deadline has been extended to March 10, 2010. For further information, contact Yeonjeong Park at ypark78@vt.edu.

Please contact me if you have any questions.

Regards,

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