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A Comparative Study of First Time International College Studentss Level of Anxiety in Relationship to Awareness of Their Learning-style Preferences

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A COMPARATIVE STUDY OF FIRST TIME INTERNATIONAL COLLEGE STUDENTS' LEVEL OF ANXIETY IN RELATIONSHIP TO AWARENESS OF THEIR LEARNING-STYLE PREFERENCES

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Title: A Comparative Study of First Time International College Students' Level of Anxiety in Relationship to Awareness of Their Learning-style Preferences

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Given the receptivity of American colleges to international students, administrators and professors must recognize the diversity such registrants bring to campus in the form of achievement, age, gender, language, and national differences.

The purpose of this study was to compare learning style preferences of international first year college students and to analyze the effects of accommodating learning-style preferences of first year international college students on achievement and anxiety levels over one semester. This dissertation focused on the identification of learning style profiles of first time visiting Japanese, Korean, and Chinese college student populations. It also assessed the anxiety and acculturation levels of these international students when they were first introduced to the American educational system which incorporated teacher facilitation and promoted student directed studies. Finally, student learning styles were assessed after a six-week summer session to see if learning styles remained the same after students were introduced to the American educational system. After the six-week summer session and two semesters, a focus group meeting with a sample population of students and a separate focus group meeting with instructors were held to confirm quantitative findings.

The results of the study provide reason for an optimistic assessment of the response of Asian students to the new learning environment, as well as for a positive

evaluation of the response of the instructional staff to the learning style differences of Asian students. Although the Asian students were clearly surprised by aspects of the American classroom that differed markedly from their prior learning experiences in Asia, they generally adapted quickly and comfortably. The results of the quantitative portion of the study make it clear that the Asian students did not change very much in their learning styles over the course of six weeks here, but the student responses in focus groups suggest strongly that they were able to adapt and to function quite well in learning situations that were quite different from what they had experienced in their home countries.

ACKNOWLEDGMENTS

At the onset of my journey, I thought I could complete this dissertation on my own. I thought perseverance, dedication, and time would see me through this lonely task. Upon reflection of the most arduous task of my life, I see I am wrong. I could not have achieved completion of this dissertation alone; indeed, without the collaboration of mentors (now friends), colleagues, and family, I would not have succeeded.

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Most importantly, I would like to dedicate this dissertation, to my loving husband, George, without whom I would not celebrate. You understood my need for intellectual growth and provided the time and space to make it happen.

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CHAPTER I

INTRODUCTION

With its size, reputation, and willingness to accept students from foreign countries, the United States is a popular destination country for students who are members of an increasing global community and wish to continue their education (United States Department of Homeland Security, 2007). The federal government's Department of Homeland Security *Yearbook of Immigration Statistics* provided information on the number of foreign nationals who were legally granted permission to become permanent residents, or those who were admitted in the United States on a temporary basis: tourists, students, or workers (2007).

The United States, a land of mosaic cultures, has accepted immigrants and non-immigrants since its origin, and American colleges also welcomed this population for the humanistic and economic support they provided. As a result, the admission of nonimmigrant students presented challenges, as well as, many problems to the educational systems in which they studied (Cates, 1992). The data collected in the *Yearbook of Immigration Statistics* included the increasing numbers of foreign students studying in American schools, which raised the issue that American instructors were faced with educating increasingly diverse student populations (U.S. Department of Homeland Security, 2007). In light of this challenge and the continued growth of a global community, the purpose of this study was to determine if 1) national differences existed in the learning styles of newly arrived Chinese, Japanese, and Korean college students, 2) gender differences existed in the learning styles of newly arrived Chinese, Japanese, and Korean college students, and 3) there were changes in learning styles within the

population due to acculturation and anxiety from the beginning of the semester to the end of the semester.

Statement of the Problem

The present study addressed the problem that many students immigrated to the United States to study in American colleges. Furthermore, institutions of higher education needed to be aware of cultural differences in order to improve academic achievement of these students. According to the 2003 *Yearbook of Immigration Statistics* of the United States Government, legal immigration in 2003 reached 705,827 people and total nonimmigrant (see definition on page 17) admissions reached 27.8 million (US Dept. of Homeland Security, 2004). By 2007, the *Yearbook of Immigration Statistics* reported that legal immigration of nonimmigrant Asian students and exchanges visitors (which included spouses and children of students) reached 5,835,323. Of this number, 86,258 were from Japan; 155,178 were from South Korean; and 95,698 were from China (US Dept. of Homeland Security, 2007). It, therefore, seemed reasonable to study these three predominant groups that came to study in the United States to see if cultural differences may have influenced the way students acquired knowledge.

Statement of the Purpose

International education and exchange is vital to national security and world economy. Allan E. Goodman (2004), President and Chief Executive Officer, Institute of International Education (IIE) viewed it as a means of sharing and explaining American culture while understanding and sharing global perspectives. And, according to Ngai (2003), institutions of higher education recognized the value of diverse student populations on campus. The *Educational Information and Resources Branch*

(ECA/A/S/A) of the United States Government stated that foreign students studying in the U.S. "contribute an estimated $13.5-14.5 billion annually to the U.S. economy" (IIE, 2006; Bureau of Educational and Cultural Affairs, 2008). Therefore, aside from the political and moral reasoning of government officials, institutions of higher education in the U.S. tended to welcome international students for the economic and humanistic cornerstone they provided.

Diversity among students provided richer academic experiences, greater understanding among cultures, and possibilities for future global economic opportunities for the students and the colleges in which they studied. Such student diversity on campuses provided opportunities for "meaningful interactions…required to develop the ability to listen and discern different cultural messages" (Ngai, 2003, p. 164). Such acculturation, assimilation, "adaptation to a new culture", "borrowing traits from another culture" or the "acquisition of culture" from a particular society (Merriam-Webster, 1993), provided the basis for "global expansion of human activities" which had been the foundation of economic trade (Beerkens, 2003, p. 130). Given the receptivity of American colleges to international students, administrators and professors were faced with the challenge of recognizing the diversity such registrants brought to campus in the form of achievement, age, gender, language, and national differences. According to Berry, "when groups of different cultural backgrounds and their individual members engage each other, a process of acculturation begins, leading to cultural and psychological changes in both parties" (2008a, p. 328). Therefore, educators' awareness of the cultural diversity among their students, including "cultural generalizations" where certain groups are considered "more collectivist" (Landis, Bennett, & Bennett, 2004, p.

151) or other situations where students learned through didactic, “lecture-discussion format” versus more “experiential approach”, enabled them to provide equal learning opportunities for the diverse student pool (Paige, 1993, p.172).

Although early theorists, such as Piaget, proposed that “all human thought [strove] toward the ideal of scientific thinking” through linguistics and logic (Gardner, xi), Gardner suggested that there was not only one intelligence, but eight: “the linguistic and logical-mathematical intelligence,…musical intelligence,….spatial intelligence,…bodily-kinesthetic,…two forms of personal intelligence (1993). Gardner has since included an eighth intelligence, naturalist intelligence. This intelligence focused on and processed information related to distinguishing [differences between] manmade and natural objects” (Gardner and Moran, 2006, p. 229). Research conducted by Dunn and Dunn concurred with Gardner, and added “five major strands stimuli …namely environmental, emotional, sociological, physiological, and psychological elements that significantly influences how many individuals learn” (Dunn and Griggs, 2003, p. 2). Please see *Figure 1,* The Dunn and Dunn Learning Style Model for a complete picture of the model.

Dunn and Dunn suggested that people not only learned more easily through their learning-style strengths rather than through weaknesses, they also learned “in different settings,…at different times of the day or night,…and through various sociological preferences” (Dunn and Griggs, 2003, p.4). Dunn and Dunn were supported by Gardner who added that “it is not reasonable to assume that the limits and the possibilities of adult learning are the same across diverse …systems (1993). He suggested further study was

required to discover the "range of abilities or potentials that …can be found…within a population" and how the environment affects or "manipulates" learning (Gardner, 1993).

While many others have done studies similar to Gardner (see chapter two), Dunn and Dunn's experimental research also supported this belief. Their research documented the statistically significant increase in achievement-and-attitude test scores of adult populations either taught through their individual learning styles or provided with homework prescriptions for studying through their unique learning-style strengths (Dunn & Griggs, 2003). Such homework prescriptions included providing resources that permitted choices of multi-sensory materials, permitting students to work in groups (or in pairs, or alone), role-playing, brainstorming, and game-like reinforcements in environments that varied according to sound, light, temperature, and design (Dunn and Griggs, 2003).

This dissertation focused on the identification of learning style profiles of first time visiting Japanese, Korean, and Chinese college student populations. It also assessed the anxiety levels of these international students when they were first introduced to the American educational system which incorporated teacher facilitation and promoted student directed studies. Finally, student learning styles were assessed after a six-week summer session and two semesters to see if they remained the same after students were introduced to the American educational system.

Rationale for the Study

This study addressed the dilemma faced by classroom teachers, primarily female Caucasian, of educating children from diverse cultures (Brown, 2004). Research conducted by Brown hypothesized that raising cultural awareness and the level of

pedagogical skills enabled teachers to effectively communicate with culturally diverse students and their families in order to reduce anxiety and enhance the learning experience of all. While Brown's research focused on students K-12, Dunn and Griggs suggested that young and adult learners alike shared in the commonality of having unique learning styles; they "concentrate, process, and remember new and difficult information under very different conditions" (1995, p. 15). Fazey and Marton (2002) concurred. They, too, suggested that there were various methods used by a learner in order to comprehend something. Each individual "discern[ed}" or grasped particular information and retained it based on prior knowledge or experience or "frame of reference" or perspective (pp. 237-238). In order to effectively transmit knowledge, instructors needed to understand how learners interpreted content material. Bennett (1986) suggested altering approaches to teaching in order to meet student needs.

Brown's research, based upon the theories of such educational authorities as Bennett (1986) and Gay (1996), suggested that teacher training in cultural diversity include reflection and self-examination of the personal beliefs of the student teacher (Brown, 2004) and awareness of the variation of perspectives held by students. This was substantiated by Chance who suggested that value judgments could be changed and modified through experience and environment (1988). Research by Dee and Henkin also supported this belief and suggested that teachers' knowledge of each individual student's learning preference (2002), and understanding the schemata or experiences that collectively provide the foundation for interpretation of new material (Merriam-Webster, 1993), enhanced the understanding capabilities of the student. Fazey and Marton suggested that accepting the existence of a "variation in perspective" in the classroom

was “crucial for learning and understanding” and produced more satisfactory student outcomes (2002, p. 238).

The question arose as to how to identify student schemata. In a study conducted by Mainemelis, Boyatzis, and Kolb (2002), learning styles were identified in order to determine individual or specialized methods of learning that result in adult cognitive development. This research suggested that adult learning was not static; it moved from “specialization to integration” through understanding, experiencing, acting, and reflecting (Mainemelis, et al., 2002). Research conducted by Young, Klemz, & Murphy (2003) studied the implementation of pedagogical methods that were congruent with preferred learning styles in order to produce favorable learning outcomes. While the results of their research suggested that learning style alone was not a predictor of student outcomes, it indicated that the use of learning style methodologies in conjunction with other various instructional methods enhanced student performance.

According to studies by Dunn & Griggs (1995), while cultural differences were not necessarily the basis for diverse learning styles, certain learning style developmental characteristics such as the “need for structure, motivation, and sociological preferences” were considered cultural (p. 121). Gender, age, and achievement rates also contributed to preferences in learning styles. However, “gifted Korean adolescents tended to be peer-oriented” and Chinese students “prefer[ed] bright light…warm temperature…formal design…and structure” while learning (Dunn & Griggs, 1995, pp. 21 & 117). Therefore, these researchers agreed with Brown (2004), that educators should reflect on and be aware of their own preferences and beliefs about diverse cultures in order to present appropriate instruction. Research also suggested that student awareness of his or her own

learning style was important and recommended to enhance student "academic achievement" (Dunn & Griggs, 1995, p. 121).

But not all students learn through the same teaching methodologies. Students from different backgrounds may learn in different manners and "learning styles differ from culture to culture" (Cushner, McClelland, & Safford, 1992, p. 40). Coker (1995) re-affirmed the value of identifying and recognizing student learning styles as being important in order to optimize learning by suggesting that effective education was based on the awareness of each individual's learning-style preference and perspective.

Park (2000) found that there were significant ethnic learning style differences among students. In particular, educational systems predicated on the Confucian philosophy produced students whose cultural values were distinctly different than those upheld by Americans. These inherent differences manifested themselves in the learning styles of students. For instance, in these Confucian-based Asian cultures, which were founded mainly on humility, respect, and obedience, students remained passive and non-verbal. Student-teacher interactions were therefore hierarchical, and lessons were teacher-based lectures (Holmes, 2004; Park, 2000).

Based upon the theories of Kolb (1976), Dunn and Griggs (1995) suggested that regardless of cultural differences, instruction should be based on guiding principles that provide the basis for moral judgment and that, according to Goodlad, "the prime role of our schools is the development of the full potential of each individual" (p. 120). The guiding principles of the Dunn & Dunn Learning Style focused on teachers enhancing their own awareness of how students learn (1998). The Dunn and Dunn method identified the learning style preferences of individual students, provided various

extensive study guides and action planners, and recommended that teachers coordinate their teaching methodologies with the learning styles of their students (Carbo, et al., 1991; Dunn & Griggs, 2003; Rundle & Dunn, 1996, 1998, 1999, 2000).

Statement of the Questions

American colleges and universities welcome international students for the economic and humanistic cornerstone they provide, and studies suggested that cultural diversity on college campuses produced favorable results for both international and American students' educational experiences (Beerkens, 2003; Goodman, 2004; Griggs, et al., 1997; Ngai, 2003; & Paige, 1993). Therefore, teachers' understanding and tolerance of student anxiety created by culture shock and diverse learning styles was vital to the academic success of their students. Dunn & Griggs indicated that lack of student achievement was directly related to teaching methodologies of their instructors and teachers should be aware of student learning styles (1995).

Therefore, questions considered with regard to student achievement and teaching methodologies in American colleges were:

1. To what extent did anxiety and/or acculturation influence learning styles in Chinese, Japanese, and Korean international students over an orientation semester?
2. Did learning style profiles of newly arrived Chinese, Japanese, and Korean international students differ among the research population relative to culture and gender within the group?

Professional Significance of the Study

With foreign students in the classroom, teachers were faced with students holding different world views than their own. Since in 2007, Japan, China, and South Korea were among the top six (6) countries sending non-immigrants to the United States on a temporary basis (US Department of Homeland Security, 2007, pp. 62-77). Among them, 4,122,044 were from Japan; 1,028,253 were from South Korea; and 685,026 were from China (pp. 71-73). Among these numbers of total non-immigrants, students and their families comprised the following: 86,258 from Japan; 95,698 from China, and 155,178 from South Korea indicating that from six of the leading places of origin, the number of visiting students were from East Asia (pp. 76-77). Therefore because of the importance of East Asian students studying in the United States, this study focused on non-immigrant students from China, Japan, and Korea.

Overview of Methodology

The methods used in conducting this case study were primarily qualitative in design. The information gathered and data collected were validated through the use of triangular concepts (Cresswell, 1998). The study included the analysis of student documents, such as GPA from the College database; pre test results of Spielberger's *Stait-Trait Anxiety Inventory* (1983); assessment from *Building Excellence* (BE) (Rundle & Dunn, 1996, 1998, 1999, 2000); and results from the *Suinn-Lew Asian Self Identity Acculturation* (SL-ASIA) (Suinn, 1992); post-test results of the afore mentioned instruments (Spielberger, 1983; Rundle & Dunn, 1996, 1998, 1999, 2000; Suinn, 1992); and interviews and focus group meetings with administrators, instructors, students, and professionals in the field of international studies at the testing site in an attempt to

determine if learning styles of the population changed over a six-week summer session and two semesters in an American college.

After the population completed an intensive six-week language program, the Summer Culture and Language Program (SCLP), and two semesters at the College, international students were post-tested for anxiety levels through the use of an instrument, Spielberger's *State-Trait Anxiety Inventory* (1983). The STAI was designed as a measurement of individual anxiety levels, providing a comprehensive approach to the identification of how respondents feel "right now, at this moment…and…how people generally feel" (Spielberger, 1983, p. 6). This information was interpreted through the use of a correlation design.

I administered Spielberger's *State-Trait Anxiety Inventory for Adults* (1983). Pre –test results from the SCLP and post-test results from this inventory were analyzed by computer generated correlations through the use of the *Statistics Package for the Social Sciences (SPSS)* (1996).

Thirty first time members of the SCLP population continued to study for two more semesters at the College. After this new population completed SCLP and two semesters at the College, I administered a post-test of the *Building Excellence* (BE), an instrument developed for the adult learner by Performance Concepts International, Ltd. (Rundle & Dunn, 2000), to this new target population of approximately 30 first time college students in departments as varied as Business, Education, English and Foreign Language, Equine Studies, Communication and Fine Arts, Mathematics and Natural Sciences, and Social and Behavioral Sciences. They were administered *Building Excellence* and their profiles were analyzed through computer-generated computations.

The profiles of the international students were compared and recorded for the independent variables of age, achievement, gender, and ethnicity/nationality. Student advisors received a narrative description of the students' learning-style preferences along with an extensive study guide and action planner.

Descriptive statistics were obtained from Performance Concepts International (Rundle & Dunn, 2000) and Two-tailed t-tests for analysis of independent samples and analysis of variance (ANOVA) were calculated on group and individual findings. Performance Concepts, Ltd, an affiliate of the St. John's University's Center for the Study of Learning and Teaching Styles, is the publisher of the computer-based, self-assessing *Building Excellence* survey (Rundle & Dunn, 2000). Further discussion of this inventory was discussed in Chapter 3.

Because learning styles of students change with maturity and length of time in the United States (DePaula, 2003: Dunn & Griggs, 1995; and Reid, 1987), action steps, such as, changing behaviors and ways of doing so followed after focus group discussions verified findings (Stake, 1995; Cresswell, 1998).

In order to assess whether or not change in learning style preference was due to anxiety to acculturation, the *Suinn-Lew Asian Self-Identity Acculturation Scale* (SL-ASIA)(Suinn, Khoo, & Ahuna, 1995) was re-administered to the 30 first-time international students who remained on campus after SCLP for Fall and Spring Semesters. The SL-ASIA scale was a questionnaire comprised of 21 multiple-choice items from areas such as language, identity, friendships, behaviors, backgrounds, and attitudes (Suinn, et. al., 1995).

Twenty of the 30 remaining students accepted the offer for the second post-test. Due to the small number of remaining students, the analysis reported was based on the 86 students from the initial six-week program. To include the sample from the second post-test would threaten the stability of between group comparisons and severely limit the generalizability of the results. Therefore, the results of the second post-test were dropped. These procedures were further discussed in chapter three, which included a detailed description of the proposed methodology.

Delimitations

International students studying at an American college for the first time were chosen for this study. While the research site hosted international students from 14 different countries, the study was restricted to three cultural norms: Chinese, Japanese, and Korean college students studying the College.

The parameters of this study were also limited by the use of *Building Excellence* (Rundle & Dunn, 2000), as the only instrument of measuring sociological learning preferences. This instrument was used because of its convenience of being an on-line survey that produced immediate results. While research suggested that this instrument, based on the Dunn and Dunn Model of Learning-Style Preference was valid (De Paula, 2003; Dunn & Griggs, 1995, 2000, 2003; Dunn, Griggs, Olson, Gorman, & Beasley, 1995; Rundle & Dunn, 2000; Honigsfeld, 2000; and Pfleger-Dunham, 1999), it was only one of several inventories available.

The uniqueness of this study was found in the setting in northwest New Jersey, an area where second language learner (L2) students attended a small Liberal Arts College where faculty was primarily Caucasian. While much of the population was from a

similar culture, many more students from various cultures are expected to enter this institution as enrollment expands, and concerns focused on preparing teachers to instruct these second language learners from various cultures. Because the sample size of the population studied was less than 86, limitations of this study included the fact that the study was generalizable only to students enrolled at small, private colleges with similar populations. However, the qualitative design of this study, which allows for more in-depth study of the target population, "promote[d] greater understanding" of first-time international students (Gay, 1996, p. 208).

According to Berry (2008b), the process of acculturation varies for each individual, and Chance (1988) suggested there may be limitations to learning based on the individual's predisposition to acquire new knowledge. Therefore, while acculturation and anxiety of the test population may also be related to the duration of time in its present environment, this study was conducted to meet the needs of this College's particular location and population. Ideally, subjects should be exposed to the American education system for a longer time in order to accurately assess its relationship to learning styles.

Permission was granted by the Acting President of the College to the researcher to assess College database results of surveys from a six (6) week Summer Culture and Language Program, where students were immersed in intensive English language study. Sample students were further assessed after two (2) full 16-week semesters during the school year where they took a full credit course of study in their majors along with ESL classes (Appendix B). However, due to the small number of Chinese students (n-11), Japanese students (n-3), and Korean students (n-6), the analysis reported was based on the 81 Chinese and Korean students' results from the six-week semester only. To include

the sample from the second post-test would threaten the stability of between group comparisons and severely limit the generalizability of the results.

While TOEFL scores were not available for all subjects, GPAs from schools of their homeland in the study of English, which were factored into the College database using formulas that provide Centenary equivalencies, and results from the six-week intensive English program (SCLP) were used to assess levels of English language ability.

Assumptions

Students were interviewed by their instructors prior to class placement to access their levels of English language speaking ability. During these interviews, students were asked how long they have studied English in their home schools; they were asked to answer simple questions (Appendix F). Therefore, assumptions were made that the international student population of this study have been exposed to and studied the English language for at least eight (8) years, a requirement of international students who wish to study abroad. Results of the interviews suggested the researcher also assume this language instruction was given through traditional Asian methods of education and by non-Western instructors. It was also assumed that the students were not speaking English, and had minimal exposure to American culture in their homes.

Definitions of Terms

Acculturation, as defined by Merriam-Webster Dictionary (1993), is a

> process that can occur "when groups of different cultural backgrounds and their individual members engage each other".

Aliens, as defined by the U.S. Office of Immigration Statistics, are "migrants who apply

for different legal statuses and immigration law enforcement activities" (US Department of Homeland Security, 2004, p. 1).

Anxiety, as defined by Beck, is an emotional condition of feeling threatened, in danger, or of unpredictability and uncertainty (Greenberg & Beck, 1989).

Assimilation, as defined by Richard Suinn, is a process "whereby a host culture absorbs the immigrant culture" (1992).

Contract Activity Packages (CAPS) are instructional methods which provide self motivated students with the means to learn at their own rate (Dunn & Griggs, 2003).

Culture, as defined by Kanter (2001) and Merriam-Webster Dictionary (1993) is the set of basic principles, shared values, shared identity, shared knowledge, customary beliefs, social mores, and material traits of a racial, religious, or social group.

Cultural generalizations, as defined by Landis, Bennett, & Bennett (2004), is the belief that there are certain dominant tendencies among particular cultural groups.

Culture Shock, as defined by Paige (1993), is the "emotional reaction" to unfamiliar surroundings especially when one is deprived of "familiar cues" (p. 2).

Diversity, according to Merrriam-Webster Dictionary (1993), is the fact or quality of being diverse, or different from another.

Domestic Students, as defined for this study, refers to American students.

First Time Students, as defined by the researcher of this study, refers to students attending the College for the first time.

Intelligence, as defined by Gardner (1993), "is the ability to solve problems, or create products, that are valued within one or more cultural settings" (p. x).

L2 as defined by Larsen-Freeman (1991) was an "abbreviation for the second language".

Learning, as defined by Fazey and Marton (2002), "is seen as a change in the learner's capability of experiencing something in the world".

Learning Style, as defined by Dunn & Griggs (2003), is the ability of people to learn and "remember new and difficult information through different perceptual modalities" (p. 4).

Learning Style Model, as described by Dunn and Dunn, is based on twenty-one elements arranged among 5 stimuli that affect the learning of individuals (Dunn & Griggs, 2003).

Learning Style Preferences are how (a) immediate environment, (b) individual emotionality, (c) sociological needs, (d) physical characteristics, and (e) psychological inclinations affect individual learners (Carbo, Dunn, & Dunn, 1991).

Multiculturalism, as defined by Richard Suinn, is a process "whereby two or more cultures exist side-by-side" (1992).

Non-immigrants, as defined by U.S. Office of Immigration Statistics, include aliens who are "authorized to stay in the United States for a limited time…and include those who…come to study" (US Department of Homeland Security, 2004, p. 1). For the purpose of this study, they will also be referred to as L2 learners or ESL international students.

S-Anxiety scale (STAI Form Y-1), as defined by Spielberger (1983), consists of twenty statements that evaluated how respondents felt at that particular moment.

STAI, is defined by Spielberger (1983) as the *Stait-Trait Anxiety Inventory*.

State Anxiety (S-Anxiety) identifies transitory emotional conditions that were affected by specific stimuli and situations (Spielberger, 1983).

Trait or Situational Anxiety, as defined by Spielberger (1983), is the reaction tendency people have in perceiving stressful situations. This is based upon the individual's past experiences.

T-Anxiety scale (STAI Form Y-2), as defined by Spielberger (1983), consists of twenty statements that evaluate how respondents generally feel.

Triangulation of information, as defined by Cresswell (1998) is the "convergence of information" to assure validity (p. 213).

Summary

The importance of expertise when teaching in diverse student classrooms is understood. However, there is limited research on how and under what circumstances teachers develop expertise needed to teach international students effectively. This study illuminated educator's awareness of the cultural diversity among their students, their diverse learning styles, and the need to provide equal learning opportunities for the diverse student pool.

Chapter II reviewed the research on the theoretical and historical base of learning styles and the need for cultural awareness in the classroom. It presented research on the cultural anxiety and its relationship to student learning and the importance of understanding under which conditions anxiety was manifested.

Chapter III described the qualitative methods in which subjects, materials, and procedures occurred. Subjects were first-time international students at the College. Collection of data from the College's database was included: Grade Point Averages

(GPA), country of origin, age, gender, grade results from the Summer Culture and Language Program, Pre and post tests of the *State-Trait Anxiety Inventory* (Spielberger, 1983), *Building Excellence* (Rundle & Dunn, 2000), and the *Suinn-Lew Asian Self Identity Acculturation* survey (Suinn, 1992). This data as compared with statistics from post-tests results of the same three inventories administered after a full semester of study at the College.

Procedures also included validation of data collected by conducting focus group interviews with students, instructors, and International Studies Office administrators.

Chapter IV addressed results of the statistical analysis. Tables were provided to describe the statistical results, and a narrative discussed the qualitative findings.

Chapter V provided a narrative summary of conclusions and recommendations as supported by the research findings.

CHAPTER II

REVIEW OF RELATED LITERATURE

Theoretical and Historical Base of the Topic

The growing number of multicultural students in the United States, as suggested by the 2003 *Yearbook of Immigration Statistics*, indicated that New Jersey institutions of higher education welcomed many international students to their campuses for the economic and humanistic cornerstone they provided (United States Department of Homeland Security, 2004). While international education and exchange is vital to national security and world economy, schools were ill-equipped to accept the new responsibility facing them (United States Department of Homeland Security, 2004). Even though the total international nonimmigrant admissions in 2003 (27.8 million) decreased by .2 percent from 2002, the total number of students in this category from China, Japan, and Korea was 249,390 (United States Department of Homeland Security, 2004, p. 90). Administrators and educators in institutions of higher education must recognize the diversity such restraints bring to campus in the form of achievement, age, gender, language, and national differences. Therefore, the review of related literature in this study encompassed each of the following categories: (a) cultural awareness; (b) anxiety and learning; (c) anxiety, learning, and international students; and (d) learning styles of Chinese, Japanese, and Korean students.

Cultural Awareness

Ward (2002) was concerned with the fact that a "lack of understanding of cultural differences caused intolerance and war" and that "the people of the United States and the world need to be…accepting of other cultures" (p. 1). Larsen-Freeman and Long (1991)

concluded it was paramount for the instructor of second language learners to understand the many methods available in order to tailor instruction appropriately for each individual. These methods were discussed under the section entitled *Learning Styles.*

Otten (2003) suggested that internationalization was not necessarily a means of enriching academic experiences. He believed that culturally diverse student populations did not "automatically lead to intercultural contacts and learning experiences" (Otten, 2003, p. 12). Often, students tended to create friendships with culturally similar students rather than integrating with dissimilar peers. Therefore, if educators failed to use differing cultural views as a resource with students sharing their "global perspectives…and a very different world view from American students" (Goodman, 2004, p.4) then diversity in the classroom will become a disadvantage rather than an opportunity.

Second language (L-2) students often experienced intense emotions during the intercultural educational experience (Paige, 1993). Being immersed in an unfamiliar culture often created a reaction known as culture shock which caused "tense psychological stress" for the student (Paige, 1993, p.2). Consequently, intercultural education placed great demands upon its learners. Not only were students required to learn course content in a language that was other than their first or native language, they were exposed to behaviors and views different than those held by their own culture. Paige suggested that educators of international students be aware of the cultural differences facing these students since such differences can be the "source of extreme psychological dissonance" (1993, p. 5). These intercultural educators must be able to identify those elements of cultural diversity that will affect their students.

According to Paige (1993) there may be many cultural elements of the host country that students may have difficulty accepting. For example, lack of language skills of the host country may be debilitating and isolating to the student who has difficulty communicating. Ethoncentricity, racism, prejudice, and sexism of the host country may also present "psychologically intense" experiences to the student (Paige, 1993, p. 6). Park (2000) also included the manner in which students remember and learn as a culturally diverse element. She suggested that Asian students may have cultural values that are distinctly different from American values. These values are reflected in learning styles inherent of their culture were the male is dominant and children are passive and reserved. This is made manifest in students who are non-verbal and indicates that learning styles of Asian students differ from Americans, and are directly related to student achievement, thereby serving as another source of frustration for the international student (Park, 2000).

In addition, the more international students are isolated from that which is familiar, the greater the risk of becoming homesick, lonely, and feeling the pangs of culture shock (Paige, 1993). While it may be impossible to replicate that which is familiar for these students as a means of reducing the stress, every effort must be made by their educators to be aware of circumstances that may increase their anxiety and stress. Paige also suggested that the fewer intercultural experiences the student has had previously, the greater the possibility of experiencing stress in the new culture.

Anxiety and Learning

Research by Eysenck (1979) suggested that there is a correlation between anxiety and learning. Anxiety does not necessarily have an effect on the quality of performance

if there is sufficient effort expended, although it produces differential effects if there is a lack of motivation among high-anxiety subjects. The anxious subjects spend more time on irrelevant tasks, have less working memory capacity, and spend more time on secondary, rather than primary tasks. Eysenck suggested that "anxiety produces task-irrelevant cognitive activities that impair task performance" (1979, p. 365). These highly anxious subjects engage in dual activities which, ultimately, impair performance in primary tasks. Therefore, one goal of a host country school is to provide students with a comfort level that is conducive to learning (MacIntyre & Gardner, 1991a; Sogunro, 1998**).**

Anxiety, Learning, and International Students

MacIntyre and Gardner's (1991a) study of learning related to anxiety, suggested that anxiety interferes with learning and that when compared, students with low anxiety levels learn better than those who are highly anxious. Study participants included "95 first-year" English speaking students studying French as a second language (MacIntyre & Gardner, 1991a, p. 513). In another paper, the researchers investigated student anxiety from three different perspectives: trait anxiety, state anxiety, and situational anxiety. In order to measure the levels of anxiety, the authors concluded that investigation be done in the relationship between communication apprehension, foreign language anxiety, and reducing effects of anxiety in order to improve language learning in second language learners (MacIntyre & Gardner, 1991b). In an article on anxiety and second language learning, MacIntyre (1995) also suggested that deficiencies were created by anxiety arousal. Sogunro (1998) suggested avoiding anxiety in learning situations is near impossible and so it is important to understand the conditions in which the anxiety is

manifested. His report concurred with that of MacIntyre (1995): anxiety creates debilitating effects on adult learners (Sogunro, 1998).

In another study of anxiety in college level international students, El-Banna and Ibrahim (1989) reported that ESL learners with high language anxiety levels tended to perform more poorly on language tests than those with low levels of anxiety. A study by Santa-Rita (1981) supported this view as he examined the academic performance and retention rates of students who received personalized attention throughout their course of study with those who did not. The results of the research showed that the international students who received this attention competed academically and socially on a par with the regularly enrolled students.

Iwata and Higuchi's (2000) study of 149 Japanese college students indicated that college-age Japanese students studying in the United States were affected by the social norms of the host country, particularly with regard to anxiety levels since Japanese students are raised in a culture which teaches suppression of feelings producing negative or high anxiety. Of the "149" students studied, "99 living in Japan and 50 studying in the United States", were compared with "76 American university students" (Iwata & Higuchi, 2000, p. 48). Iwata and Higuchi concluded that when Japanese students studied outside Japan, they tended to adopt American cognitive and social styles by becoming more assertive and comfortable with expression, and anxiety levels were reduced (2000). However, when administered Spielberger's *State/Trait Anxiety Inventory* (STAI), Iwata and Higuchi (2000) found greater anxiety differences between Japanese students in Japan and Japanese students in the US than between Japanese students in the US and American

students when anxiety was negative. Yet, in the presence of anxiety, Japanese students in the US remained traditionally Japanese and suppressed their emotions.

In a study on the satisfaction of an Australian/Japanese homestay program, which focused on the importance of living conditions to learning experiences, Klepinger (1995) found that total immersion into a culture was suggested as paramount to learning. The latter finding on the importance of living conditions to learning was confirmed by Griggs, Price, and Suh (1997). They studied "140 college freshman" residing in residence halls on five college and university campuses in order to determine student satisfaction levels with roommates, living conditions, and college in "relations to their learning styles" (Griggs, et al., 1997, p. 28) The study concluded that the physiological status of students was a crucial indicator of satisfactory adjustment to college life, and that it was important for "residence hall directors to consider individual learning styles" when selecting room assignments for students (Griggs, et al., 1997, p. 28). These studies concluded that real life situational learning, including satisfaction with residence hall roommates, was key to successful college experiences (Griggs, et al., 1997 p. 29; Klepinger, 1995).

Zhao, Kuh, and Carini (2005) concurred. Their study, based on the comparison of international and American student engagement, supported the view that real life situation learning motivated learning and indicated positive experiences of international students as they "contribute to high levels of learning and personal development" (p. 16). The data collected for their study included a random sample of National Survey of Student Engagement (NESSE, 2000) results of first-year and senior students (n=175,000) from "317 four-year colleges and institutions" (p.212). According to NESSE data (2000), a total of "71,260" students completed the survey, with approximately "2,780

(4%)" students identifying themselves as international and "47% were first year students" (2000). The study concluded that "international students from countries similar to the host country" were engaged more and adapted more readily to the new environment, than those from countries with greater differences (p. 223). The Fifth Western Symposium on Learning reported that a student's attitude towards representatives of the new culture, as well as, his willingness to identify with that group, promoted motivation and more successful learning (Aboud & Meade, 1973).

A study of undergraduate nursing students by Lenehan (1994) suggested that levels of anxiety and anger were significantly lower in students who were instructed using their learning style strengths thereby increasing curiosity, achievement, and positive attitudes towards learning. Keane (1993) also studied undergraduate nursing students. Keane's study examined learning styles, study strategies, and specific background variables such as ethnic background and length of time in the United States (1993). The study suggested that there were positive associations with English as a primary language and the use of learning style strategies, while there were negative associations with high anxiety levels. Gregorc (1985) agreed and also suggested that students and teachers clash when teachers fail to present new material through the student's learning style preference.

Learning Styles

Many influences affect and shape one's preference for learning. "Socialization in any cultural milieu not only teaches…language…but how to learn as well" (Cushner, et.al., 1992, p. 108). Tweed and Lehman (2002) considered Confucian and Socratic approaches to learning. They reported that the culture in which a student lives provides

"tools, habits, and assumptions" that affect human behavior and learning (Tweed & Lehman, 2002, p. 89). Students from East Asia may be more "culturally Chinese" and process knowledge through a Confucian style of learning in which students expect a pragmatic approach to learning where the role of the teacher is paramount (Tweed & Lehman, 2002, p. 89). The teacher is the exemplar from which knowledge flows, and students observe, respect, and obey. They do not question or generate their own ideas (2002).

This Confucian-oriented approach to learning clashes with Western-Socratic ideals in American classrooms. In these settings, teachers are guides and lessons involve "overt and private questioning, expression of personal hypotheses, and a desire for self-directed tasks" (Tweed & Lehman, 2002, p. 93). The differences between such culturally diverse groups in American schools may lead to ability differences of Asian international students and their American counterparts (Sam & Berry, 1976). Sam and Berry suggested that the greater existence of cultural differences, the greater stress thus further complicating the learning environment (2006). They further concluded that re-shaping of habitual patterns of learning may be necessary "to meet the demands of a particular society", but temporary visitors, such as international students, may not fully acculturate into the new culture knowing their stay is temporary (Sam & Berry, 2006, p. 30).

Tucker (2003) concurred. In his study of understanding learning styles of Korean students in American colleges, he suggested that "a mere appreciation of cultural difference does not often translate into any significant adjustment in classroom style" (Tucker, 2003, p. 3). Based on his personal experiences working in a "Korean Extension

school", Tucker began to recognize various ways in which students learn. He noted, that the students did not think like him (2003). His observations concluded that "Korean students did not participate in classroom discussion" and were often represented by a "statesman who spoke on their behalf" (Tucker, 2003, p. 4). Tucker suggested that teachers need to take time to know each international student in order to enhance their learning potential (2003).

Clark-Thayer (1987) reported that learning style preferences represent more than how we process or react to information. Dunn and Dunn concurred. According to Dunn & Dunn (1978), learning-styles are more comprehensive—they encompass not only the cognition, but also the preferred environment in which individuals learn. Therefore, learning styles, as a field of study, has slowly evolved over several decades, consequently producing several learning-style models which may measure student learning.

However, according to Claxton and Murrell (1987), educators in teacher-centered classrooms are slow to recognize the value of learning styles. In such classrooms, educators are mainly concerned with imparting knowledge of content material rather than considering how or why the student learns. Yet, recognizing how the student learns, rather than how well or how much has been learned, is an important strategy to be employed (DePaula, 2003; Honigsfeld, 2000; Park, 2000; Pfleger-Dunham, 1999; Lewthwaite, 1999; Dunn & Griggs, 1995; Carbo, Dunn, & Dunn, 1991; Claxton & Murrell, 1987; Dunn & Dunn, 1978; Kolb, 1976). Therefore, recent changes in awareness of student outcomes, and diverse populations in the classroom have piqued educators' interest. This awareness impacts student learning. Researchers are concerned with and interested in how and why students succeed or fail (Pfleger-Dunham, 1999).

History of learning styles. Early in the 20th Century, research conducted by E.L. Thorndike indicated a student's intelligence was highly correlated with the student's achievement. Based on this assumption, all students received similar instruction with no concern for learning preference (Henson & Borthwick, 1984). But beginning in the late 1960's research studies investigating how individuals learn, produced very different assumptions (Curry, 1983; Dunn & Dunn, 1978; Gardner, 1983; Gregorc, 1985; Kolb, 1976; & Ramirez & Castenads, 1974).

Ramirez and Castenada's study investigated Mexican-American school children and their assimilation into the United States school system (1974). The research of Mexican-American children's scholastic achievement suggested they achieved poorly in comparison with their American counterparts. The researchers attributed this finding to cognitive style differences founded in cultural socialization. The research revealed two cognitive styles of learning related to the right and left hemisphere of the brain (Ramirez & Castenada, 1974). They concluded that Mexican-American students raised in households that practiced traditional Mexican cultural values, were more sensitive to authority, and maintained "communication, learning, and motivational styles" specific to that culture", thereby processing information differently than American students (Ramirez & Castenada, 1974, p. 29). However, they hypothesized that the children's styles of learning could be changed (Ramirez & Castenada, 1974). They recommended that educators must be able to identify such cultural differences among their students and suggested that the "cognitive styles" of teaching should match the cognitive learning styles of the students. They reported that "the academic performance is better" when cognitive styles match (Ramirez & Castenada, 1974, p. 131).

Kolb (1976), an early pioneer in the field of learning style research, developed a model of learning-style preference based on experiential learning by identifying learners as: (a) those who learn through concrete experience and reflection (feeling); (b) those who assimilate through abstract concepts and observation (watching); (c) convergers who combine the former approaches (doing); and (d); accommodators who combine concrete experience and active experimentation (thinking-doing). Kolb's *Learning Style Inventory* (1976) produced information with regard to the type of environment that is most conducive to student learning suggesting that students who learn through concrete experience and reflection (feeling) responded to discussion rather than lectures; those who are assimilators preferred more factual information and theory rather than discovery learning activities; convergers responded to projects rather than lectures; and accommodators combined all methods (Clark-Thayer, 1987). The Kolb model has been used extensively by researchers who concluded that learning styles of students are related to their choices of academic disciplines.

In a paper presented by Curry (1983), the metaphor of an onion was used to represent learning styles. In this theory, the layers of the onion were representative of various levels of a person's personality characteristics. Each layer described how a person absorbs and processes information, how a person socially interacts and how learning environment and methodology of instruction affect the learner (Claxton & Murrell, 1987).

Gregorc (1985) identified different types of student learners as preferring orderly, analytic material and those who preferred broad, global ideas. He further indicated students could be categorized as: concrete/sequential, concrete/random,

abstract/sequential, or abstract/random learners and should be aware of their individual modes of learning (1985). Schmeck (1988) recommended combining the styles and advocated teaching students to apply different strategies to different tasks, and Hunt (1987) included an emotional component to these strategies.

Gardner(1983) proposed the theory of multiple intelligences based on "neurological, evolutionary, and cross-cultural evidence (p. xii). The theory reported that intelligence can be observed through eight strengths or criteria: linguistic, musical, logical-mathematics, spatial, bodily-kinesthetic, interpersonal, intrapersonal, and most recently, naturalistic means of processing information (Gardner & Moran, 2006). Competence in the linguistic intelligence, the ability to use language through phonetics and syntax, is "the most widely and most democratically shared across the human species (Gardner, 1983, p. 78). Musical intelligence, the ability to "discern meaning and importance in sets of pitches" is the earliest to emerge (Gardner, 1983, pp. 98-99). Logical-mathematical intelligence, the ability to group objects together, does not "have its origins in the auditory-oral sphere", as do linguistics and music (Gardner, 1983, p. 129). Spatial intelligence calls upon the power to create mental images (Gardner, 1983, p.173). Bodily-kinesthetic, or the ability to control one's bodily motions, is a skill made manifest in the movements of a dancer or other performer (Gardner, 1983, p.222). The personal intelligences access one's own feelings and process information, through "one's range of affects or emotions" related to self and others (Gardner, 1983, p. 239). Naturalistic intelligence, while it does not concern itself with the environment as it affects the human body (heat or light), focuses on distinguishing between natural and man-made

objects thereby recognizing and classifying natural phenomena (Gardner & Moran, 2006).

Gardner concluded that the frames of reference of an individual increases with age and experience further developing the human "symbol system" and bridging the gap between "intelligences and educational practices" (Gardner, 1983, p. 298).

Dunn and Dunn model. Dunn and Dunn enhanced the idea of styles of learning by defining how a person would begin to concentrate on, process, internalize, and retain new information (Dunn & Dunn, 1978; Dunn &Griggs, 1995, 2000, 2003). Based on the study of the cognitive-style and brain-lateralization theories along with observations, the Dunn and Dunn Learning-Style model emerged as a model for assessing learning style preferences by identifying the psychological and physiological elements that affect learning (Honigsfeld, 2000). The Dunn and Dunn Model is comprehensive and consists of 28 learning-style elements which are divided into five different strands or classifications of stimuli that shape personal learning styles (DePaula, 2003; Dunn & Griggs, 1995, 2000, 2003; Lewthwaite, 1999; Pfleger-Dunham, 1999; Dunn & Dunn, 1978) (see figure 1). The first strand focuses on environmental elements of sound, temperature, light and design. The second strand is concerned with emotional elements of motivation, persistence, responsibility, and structure. The third strand examines the sociological characteristics of the learner, such as, preference to learning alone, in pairs, in teams, with peers, or authority figures. The fourth strand is physiological. Is the learner an auditory, visual, kinesthetic or tactual learner? Does time of day, need for intake (food) or mobility affect learning? The fifth, and psychological strand, examines

such individual learning traits as global/analytic, hemispheric, and impulsive or reflective traits.

In a meta-analysis of 42 experimental studies, the Dunn and Dunn model was tested for validity. The findings suggested that students whose learning styles were accommodated were expected to achieve 75% of a standard deviation higher than students whose learning preferences were not addressed (Dunn, Griggs, Olson, Gorman, and Beasley, 1995).

While in 1990, Curry expressed concern with such studies being conducted by the Dunn and Dunn team as being biased, more recent research conducted by others supported the findings of the Dunn team (Lewthwaite, 1999). Such research suggested that students whose learning styles were addressed "achieve[d] .75 of a standard deviation higher than those who did not have their learning styles accommodated" (Lewthwaite, 1999, p. 5). In addition, addressing global learning needs by creating classrooms where cultural diversity is present, the Dunn and Dunn Model addressed and synthesized many learning style preferences of students as it is based on "instructional environment, resources, approaches, and strengths" (Dunn and Griggs, 2003) while it "blend[d]) concepts like foreign, strange, and otherness" in an effort to "promote understanding of cultural diversity" by exposing students and teachers to diverse learning styles (Teekens, 2003).

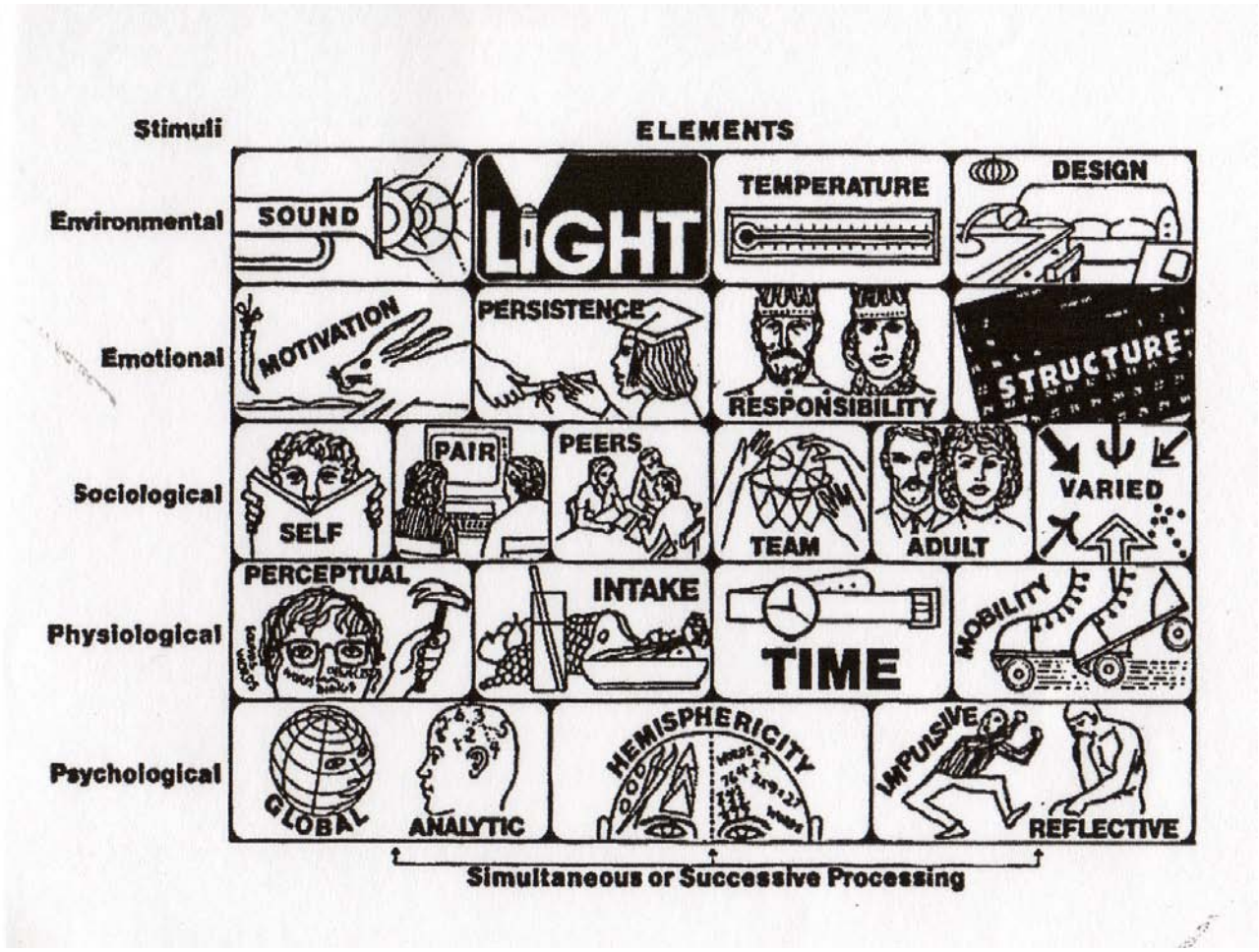

Figure 1. The Dunn and Dunn Learning Style Model.

Research Supported By and In Contradiction to the Theories and Principles

Dunn and Griggs (1995) suggested that the learning styles of adult learners are unique which, when considered in instructional methodologies, revealed positive student outcomes. A study by Park (2000) also suggested that there were significant learning style differences in Asian students as compared to white students because of cultural mores, and such differences were related to academic achievement. Park's study investigated California high school students from "a subsample of 738 cases of a larger study" (2000, p. 254). Her research suggested that "Korean, Chinese, and Filipino students are more visual [learners] than Whites" and that Korean, Chinese and White students show "negative preferences for group learning" (Park, 2000, p. 250). She also suggested that "ESL students strongly prefer kinesthetic and tactile learning styles" (Park, 2000, p. 250). Yet, ESL students who were in the United States for longer than three years were "significantly more auditory" than their ESL counterparts who were in the United States for a shorter time. This suggested that the longer ESL students remained in the United States, the more closely their learning style preferences resembled native speakers (Park, 2000, p. 250).

This theory was substantiated by Lam-Phoon (1986) who compared 143 Asian male and female college students with Caucasian male and female students at a Michigan college. Lam-Phoon's research concluded that there was a difference between Asians and Caucasians with regard to learning style, and it appeared that gender was "a contributing factor to learning-style preferences" (1986, p. 96). This was predicated on culture as the determining factor. Because of this study, Lam-Phoon (1986) recommended that further exploration be conducted in this field and that evaluating

learning styles of Asian and Caucasian college students be conducted prior to the beginning of the semester for a better understanding of student learning. Therefore, for the purposes of this study, learning style preferences and cultural biases will be considered as an element of reducing anxiety and promoting student learning.

According to Claxton & Murrell (1987), "learning style can be an extremely important element in the move to improve curricula and teaching in higher education" (p. 1). In order for students to understand the options available to them that will promote successful learning, they need to become aware of their strengths and weaknesses when approaching the learning process (Clark-Thayer, 1987); faculty awareness of learning styles is one way faculty can execute their duties as instructors (Claxton & Murrell, 1987). They indicated that if the research of Kolb, Curry, Dunn and Dunn, and others is correct, consideration of learning styles in education is "not just a nice thing to do…but…a prerequisite" to teaching (Claxton & Murrell, 1987, pp. 30-31). And while their research followed a theory of learning styles that differs from Kolb, the research of Dunn & Dunn (1978), Carbo, Dunn & Dunn (1991), Dunn & Griggs (1995), Pfleger-Dunham (1999), Lewthwaite (1999), Honigsfeld (2000), and DePaula (2003) corroborated Claxton's and Murrell's (1987) view of the importance of addressing learning styles.

Application of Research to Practice

Research conducted synthesizing studies from 1980 through 2000 using the Dunn and Dunn Model provided data that indicated "matching students' learning styles" with instruction is beneficial to student academic learning outcomes (Dunn & Griggs, 1995, p. 223).

While there was great diversity of learning-style preferences within cultures, certain biological factors or developmental characteristics affect sociological preferences. Studies indicated "gifted Korean adolescents…and Chinese Americans… tend[ed] to be peer-oriented" (Dunn & Griggs, 1995, pp. 21&117). To date, more than 112 educational institutions have conducted research using the Dunn and Dunn Model (Lewthwaite, 1999) and hundreds of studies have documented that learning-style responsive classrooms increased student learning (Dunn & Griggs, 2003). For this reason, this researcher implemented the Dunn and Dunn Learning-Style Model (see table 1).

Table 1.

Research Conducted Using the Dunn and Dunn Model

RESEARCHER, YEAR	**SAMPLE**	**SUBJECT EXAMINED**	**LS STRAND or ELEMENT EXAMINED**	**SIGNIFICANTLY HIGHER ACHIEVEMENT**
Bailey, 1988	College	N/A	(S)Environmental (E) Preferences	^
Lenehan, 1994; Lenehan, Dunn, Ingham, Murray, and Signer, 1994	Nursing Students	Anatomy, Physiology and Bacteriology	(S)Environmental	+
Napolitano, 1986	College	Psychology	(S)Emotional (E)Structure	+
Clark-Thayer, 1987	College	Mathematics	(S)Emotional (E)Motivation	+
Reynolds, 1988	Adults	Decision Making	(S)Emotional (E)Independent	
Boyle, 2000	Law School	Legal Research and Writing	(S)Emotional (E)CAPS	+
Dolle, 2000	First Year Law	Legal Research and Writing	(S)Emotional (E)Traditional Instruction	+
O'Hare, 2002	Baccalaureate Nursing Students	Adult Nursing	(S)Emotional (E)CAPS	+
Russo, 2002	Law School	Legal Research and Writing	(S)Emotional (E)CAPS	+
Gould, 1987	Adults	Teacher Evaluation	(S)Sociological	+
Griggs, 1989	Various	Various	(S)Sociological	+
PflegerDunham, 1999	College	Economics	(S)Sociological	+
Tendy, 1998	College	Leadership Training	(S)Sociological	+
Billings and Cobb, 1992	Nursing	Computer Training	(S)Sociological (E)Mobility	+
Dunn, Bruno, Sklar, and Beaudry, 1990	College	Math	(S)Psychological	+

\+ Significant achievement gains

^ Significant correlation

Summary

This review of related literature emphasized the direct correlation between anxiety and learning, the need for reducing anxiety levels in students, and raising cultural awareness of educators, particularly for American teachers who are challenged with educating students of a global community. It has been discussed that anxiety impairs learning because lack of focus is directly correlated to increased anxiety thereby illuminating the need to address the issue of anxiety (Eysenck, 1979).

Raising cultural awareness in the classroom is essential for educators in order for them to assist students in maximizing their learning potential. Adjusting and evaluating instructional methods employed in colleges is important because "individuals may evidence differently culturally based learning strategies" (Berry, Poortinga, Segall, & Dasen, 2002, p.4). It is, therefore, essential to understand the human behavior exhibited by culturally diverse individuals.

Gardner's theory of multiple intelligences, focused on, not only cultural differences, but individual intelligences which affected learning (1983). Gardner suggested that human beings are born with certain "individual proclivities" that promote learning (1983, p. xvi). These intelligences were derived from "the informational contents that exist in the world" (1983, p. xxi). Gardner claimed that while the eight intelligences are "independent of one another, …they can be …combined in a multiplicity of adaptive ways by individuals and cultures" (1983, p. 9).

Kolb's *Learning Style Inventory* produced information with regard to the type of environment that is most conducive to student learning, thereby supporting Gardner's theory (1976). Curry (1983) also supported the theory, adding the metaphor of an onion

to represent learning methods. Gregorc (1985), Schmeck (1988), Claxton and Murrell (1987), Clark-Thayer (1987), and Dunn and Dunn (1978) are among those who concurred with the theory of multiple methods of learning. In fact, the issue of learning styles has also been addressed as a consideration of "possible factors that lead to college success" (Clark-Thayer, 1987, p.163).

Dunn and Dunn (1978) enhanced the idea of styles of learning put forth by Gardner and expanded on his theory. The Dunn and Dunn model evolved into a model for assessing learning style preferences by identifying the psychological, as well as, the physiological elements that affect learning (Honigsfeld, 2000).

Therefore, raising cultural awareness through recognizing, identifying anxiety levels and learning style preferences in the classroom, through the use of *State/Trait Anxiety Inventory* (Spielberger, 1983), and BE (Rundle & Dunn, 1996, 1998, 1999, 2000) provided conditions in which effective communication reduced student anxiety. This cultural awareness among educators lends itself to greater heuristic understanding of student learning.

CHAPTER III

PARTICIPANTS, MATERIALS AND INSTRUMENTS, PROCEDURE, DATA COLLECTION AND ANALYSIS

Introduction

This study compared and contrasted learning style preferences of Chinese, Japanese, and Korean students studying at an American college for the first time. Methods used were both quantitative and qualitative in design. I submitted a consent letter to the Institution at which the participants were studying granting the privilege of employing this Institution's community members and their scholarly records from the College's database in this study (Appendix B).

Ethnicity, gender, GPA, age, and anxiety levels constituted the independent variables. The dependent variables were made up of the 28 elements of learning style as measured pre and post test by *Building Excellence* (Rundle & Dunn, 2000). Anxiety levels were accessed pre and post test through the use of the *State/Trait Anxiety Inventory*, and acculturation was measured pre and post text through the use of the *Suinn-Lew Self Identity Acculturation* scale (Spielberger, 1983 and Suinn, 1992).

Following survey data collection, the researcher conducted focus group meetings with administrators, instructors and international studies professionals; interviews with student participants; review survey results with participants; and compared grade point averages pre and post treatment (Appendices G & H). Stakeholders (administrators, instructors, students, and professionals in the field of international studies) who were interviewed and students who participated in the study received consent letters requiring their participation in this study (Appendix C).

The qualitative information gathered through focus group meetings and quantitative data collected were validated through the use of triangular concepts (Cresswell, 1998). Following interviews and focus group meetings, the researcher conducted an analysis of themes in order to report assertions suggested in the study. While this case study may not be generalizable, findings were confirmed as valid through these procedures.

Participants

The subjects who comprised the sample for this study include of a minimum of 86 first time, Korean, Japanese, and Chinese international students from a small Liberal Arts College in northwest New Jersey. All international students had at least eight (8) years of English language study taught in their home countries by instructors of the same nationality. Average GPA of the students was 2.9763 and cumulative GPA at the end of the Orientation Semester was 3.38 (Centenary College database, 2009). Approximately 30 of the international students studied at the host college site for one year only, all of whom were international students studying in the United States for the first time. Twenty of the international population remained at the host college for two (2) more semesters of study and approximately 10 will study for four years. Since the students were admitted without Toefl test score reports, the final grades from the six-week summer semester were collected to assess level of English language ability among the international population. Grade Point Averages (GPA) of all participants were included in the study as a variable. The subjects who participated in this study were a sample of 86 first time, Korean, Japanese, and Chinese students.

Total college enrollment was 1200 full time students and total full time faculty was 61. Among total student enrollment in the college, the breakdown was approximately 1100 Domestic students, 86 Asian subjects and 10 subjects from non-American western countries. The total international student population was: Brazil 2, Canada 2, China 16, Finland 1, Ghana 1, Holland 1, Japan 5, Korea 65, North Ireland 1, Sudan 1, and Zimbabwe 1. The demographic breakdown for the college was approximately 96 first-time freshmen men and 169 first-time freshmen women. Of the college student enrollment, 264 of the students were on campus for the first time and 936 are returning students. Among the total college student total, there were 456 males and 744 females (Centenary College database, 2009).

Participating in this study were five (5) of the international student faculty who received an orientation by the researcher of the instruments and procedures used in this study. They were assured that all surveys would take place during regular class-time. Any additional time required was strictly on a voluntary basis.

Materials and Instruments

Subjects were assessed for learning-style preferences through the use of one instrument, *Building Excellence* (BE) (Rundle & Dunn, 1996, 1998, 1999, 2000). This instrument was designed as a measurement of individual learning-style preferences based on the Dunn and Dunn Learning Styles Model. The Dunn and Dunn Model of Learning-Style Preference identifies learning preferences with regard to environmental (room temperature, sound, light, and design), emotional (motivation, persistence, responsibility, or structure), sociological (working alone, in pairs, with peers, on teams, with adults, or varied), physiological (perception, eating while learning, “chronobiological patterns” or

movement while learning), and psychological (global or analytic, impulsive or reflective, or hemispheric) aspects of how a student remembers and retains information (Dunn, et al., 1995). It has been used extensively in research on populations including college students and various international populations (Dunn & Griggs, 1995).

The reliability of this method was reported in a meta-analysis of learning styles based on "forty-two experimental studies…conducted between 1980-1990" (Dunn, et al., 1995). Of the forty-two experiments, thirty-six supported the model as a valid means of assessing learning-styles, thereby supporting the premise of altering instructional methods to match student learning styles in an effort to enhance academic performance (Dunn, et al., 1995).

The BE was designed as a learning-style instrument for the adult learner. It is a comprehensive approach to in the investigation of how adults learn by measuring 28 "critical elements that affect an individual's ability to concentrate on, process, absorb, and retain new and challenging information" (Stockham, Dunn, & Rundle, 1998. p. 2). The elements include physiological preferences—intake, time of day, and mobility; environmental preferences—sound, temperature, and seating during learning; perceptual preferences—motivation, conformity, structure, and task performance; sociological preferences—team interaction, authority, and variety of methods of instruction; psychological elements, such as, global, analytical, and impulsive preferences; and perceptual elements—auditory, visual, tactile, and verbal preferences during learning sessions (Stockham, Dunn, & Rundle, 1998). BE was used in this study because it was designed to be computer-based and self-scoring. Respondents received immediate feedback and identification of their learning style.

The reliability of the survey was assessed by calculating coefficient alpha using SPSS to determine the extent factors (elements) were related to each other. Scale reliability estimates for each of the elements were greater than .60, with the exception of the following: conformity/nonconformity--.56; structure--.51; authority present--.44 (Stockham, Dunn, & Rundle, 1998).

The Chinese, Japanese, and Korean population of subjects were assessed for anxiety levels through the use of one instrument, Spielberger's *State/Trait Anxiety Inventory* (1983). The STAI was designed as a measurement of individual anxiety levels, providing a comprehensive approach to the identification of how respondents feel "right now, at this moment…and…how people generally feel" (Spielberger, 1983, p. 6). It has been used extensively in research on populations including college students for fifteen years (Spielberger, 1983). The S-Anxiety scale (STAI Form Y-1 is comprised of twenty statements of how the subject feels at that particular time, while the T-Anxiety scale (STAI Form Y-2) is comprised of twenty statements of how the subject feels in general. Subjects responded to the STAI items by rating themselves on a four-point scale (Appendix C).

The initial reliability for the STAI was reported for two populations: 270 Naval recruits and 185 female college students. The reliability coefficients for the six STAI scales, based on the two populations, ranged from .78 to .92 (Spielberger, 1983). STAI is being used in research as current as February 2000. In a study by Iwata and Higuchi, Japanese students were surveyed using the *Spielberger State/Trait Anxiety Inventory* in order to compare anxiety levels of students living in Japan with their counterparts in the United States.

The Chinese, Japanese, and Korean population subjects were assessed for their level of acculturation through the use of the *Suinn-Lew Self Identity Acculturation* (SL-ASIA) scale (1992) (Appendix E). The SL-ASIA was designed as a measurement of identifying the level at which persons retain identity with their "ethnic heritage and refuse attempts to become integrated within the Western society" (Suinn, 1992). Asian-identified were represented in the SL-ASIA with a score of "1", while Western-identified were represented with a score of "5". There was the possibility that a person may assume the identity of both cultures and score "3", thereby being identified as bi-cultural. It was also possible to score "2", very Asian or "4" very Western (Suinn, et al., 1995).

Procedures

Permission was requested to collect the data for this study from the Indiana University Institutional Review Board (IRB) (Appendix A). Permission to collect data from the Centenary Database and administer the instruments to Centenary participants was granted verbally, and was obtained from Centenary College (Appendix B). Informed consent was requested and received from all participants (Appendix C).

Subjects were assured that all materials collected for this study were kept confidential. An anonymous identification number was assigned to each participant with no personal reference other than country of origin, gender, and year of birth. The researcher reminded students to answer all survey questions truthfully without concern of attempting to "please" the researcher. They were also reminded that results of this study in no way affected their grades or further study at the College. The student participants were reminded that following the study, each will be presented with a personally

designed homework prescription that will match his or her learning style in an effort to enhance academic performance (Dunn, et al, 1995).

Building Excellence Pre-test

Subjects were assessed for learning style preferences through BE (Rundle & Dunn, 1996, 1998, 1999, 2000). Permission to use samples of this survey was granted by Susan Rundle (Rundle, 2005) (Appendix D). The researcher administered BE (Rundle & Dunn, 1996, 1998, 1999, 2000) on-line surveys to a target population of 86 first time students in departments as varied as Business; Education; English and Foreign Language; Equine Studies; Communication and Fine Arts; Mathematics and Natural Sciences; and Social and Behavioral Sciences during Freshman Experience class meetings. Students were given the web site information of the survey and the administrator visited each student's computer to verify that each student accessed the correct site. The students logged-on and proceeded with the survey. As each student completed the survey, he or she electronically submitted the information to Performance Concepts International (Rundle & Dunn, 1996, 1998, 1999, 2000) where student profiles were analyzed through computer-generated computations. The profiles of the students were compared for the dependent variables of age, achievement, gender, ethnicity/nationality and were recorded. Each student's faculty member received a narrative description of student individual profiles and focus group meetings followed for discussion regarding instructional methodologies that may be introduced to the classrooms.

State/Trait Anxiety Inventory Pre-test

All international students were notified of the Spielberger (1983) *State/Trait Anxiety Inventory* survey by letter (Appendix D). The subjects answered the survey

during class-time, the first week of class for Summer Semester. Participants met their faculty members who administered the survey, and who assured them of confidentiality. An anonymous identification number was assigned to each participant with no personal reference other than country of origin, gender, and year of birth. After the subjects were seated, they were reminded that they were under no obligation to stay. The survey release form was presented and explained by the administrator. If the subjects agreed to continue, they signed the release forms and received questionnaires containing STAI Form Y-1.

Each subject was instructed to take as much time as needed to answer all the questions on Form Y-1. If there was any need for translation, subjects were permitted to use a dictionary or ask the administrator and or a translator for an explanation. At the completion of each questionnaire, the administrators returned the surveys to me, the researcher, who collected them from each faculty member and recorded the data. The forms were kept in a locked office.

Suinn-Lew Asian Self Identity Acculturation Scale Pre-test

All participants were notified of the *Suinn-Lew Asian Self Identity Acculturation* (SL-ASIA) scale (1992) by letter (Appendix F). The subjects answered the questionnaire during class-time, the first week of class in the Summer Semester. Participants met with the administrator of the survey, their faculty member for the class, who assured them of confidentiality. An anonymous identification number was assigned to each participant with no personal reference other than country of origin gender, and year of birth. This information was kept in a locked cabinet accessible only to the principal investigator. After the subjects were seated, they were reminded that they were

under no obligation to stay. The questionnaire release form was presented and explained by the administrator. If the subjects agreed to continue, they signed the release forms and received questionnaires containing the SL-ASIA questionnaire.

Each subject was instructed to take as much time as needed to answer all the questions on the questionnaire. If there was any need for translation, subjects were permitted to use a dictionary or ask the administrator and or a translator for an explanation. At the completion of each questionnaire, the administrator collected the forms and returned them to the researcher who recorded the data. The forms were kept in a locked office.

Building Excellence Post-test

All participants of the study were notified of the post-test BE survey by letter (Appendix C). Appropriate access codes for BE were obtained from Performance Concepts, Danbury, Connecticut. The class instructors and student subjects were given instructions by the researcher on how to access BE via the Internet at www.building-excellence.com and were encouraged to complete the survey during a group freshman class time (Appendix E). The participants were advised that they will receive a narrative description of their learning-style preferences and opportunities to discuss them with the researcher and their instructors. The survey administrator, the researcher, assured the subjects of confidentiality in completing the survey. After the subjects were seated, they were reminded that they were under no obligation to stay. The survey release form was presented and explained by the administrator. If the subjects agreed to continue, they signed the release form and logged-on to the BE web site.

Each subject was instructed to take as much time as needed to answer all the questions on the survey. If there was any need for explanation, subjects were permitted to ask the administrator for an explanation. At the completion of the questionnaire, the students electronically submitted the questionnaires to Performance Concepts International (Rundle & Dunn, 2000) who recorded and analyzed the data. The analyzed results were forwarded to the researcher who kept them in a locked office until the participants met for focus group meetings with the researcher and their instructors.

State/Trait Anxiety Inventory Post-test

I also re-administered the post-test of Spielberger's *State-Trait Anxiety Inventory for Adults* Form Y-2 (1983) to the same population sample international student subjects. The subjects answered the questionnaire during class-time, the last week of class in the Summer Semester. The STAI is an inventory based on anxiety levels identifying how respondents feel "right now, at this moment…and…how people generally feel" (Spielberger, pg. 6). The STAI Form Y-2 is comprised of twenty statements of how the subject feels in general. Subjects responded to the STAI items by rating themselves on a four-point scale (Appendix C).

Each subject was instructed to take as much time as needed to answer all the questions on the questionnaire. If there was any need for translation, subjects were permitted to use a dictionary or ask the administrator and or a translator for an explanation. At the completion of each questionnaire, the administrator collected the forms and returned them to the researcher who recorded the data. The forms were kept in a locked office.

Suinn-Lew Asian Self-Identity Acculturation Scale Post-test

In order to assess whether or not change in learning style preference was due to anxiety to acculturation, the *Suinn-Lew Asian Self-Identity Acculturation* scale (SL-ASIA)(Suinn, Khoo, & Ahuna, 1995) was re-administered to the 86 international students at the end of the Summer Semester. The SL-ASIA scale is a questionnaire comprised of 21 multiple-choice items from areas such as language, identity, friendships, behaviors, backgrounds, and attitudes (Suinn, et al., 1995). Scoring on the SL-ASIA scale is based on individual responses to the questions with a range of 1.00, indicating low acculturation to 5.00, indicating high acculturation (Suinn, et al., 1995). Adding the scores of the answers to all 21 items and dividing the total by 21 revealed the final acculturation score. A person with low acculturation is one whose values, behaviors, preferences, and attitudes retains high Asian identity, thereby "emphasizing collective or group attitudes…and to prefer an Asian language over English" thus identifying reading, writing, and cultural preferences (Suinn, 1995, et al., p. 4).

Focus Group

After the data from the inventory from and STAI and SL-ASIA were collected, a random sampling of the student population was selected in order to conduct a focus group meeting with the researcher who is certified English as a Second Language instructor. The survey was reviewed by members of the International Studies Office in order to ensure that the questions were culturally acceptable. They were asked what makes them feel anxious and stressed, and if they are forming friendships within and using the language of their host community. They were asked how they cope with anxiety and under what condition it dissipates (Appendix D).

After meeting with the student population of the study, I met with, and conducted a focus group meeting with a random sampling of their instructors. Questionnaires were distributed and discussed. Teachers were asked questions regarding their knowledge of international student learning styles and their plans for addressing diversity in the classroom. Data from the notes of this meeting were collected and put forth in a table (Appendix

Data Collection and Analysis

The design used to interpret BE was a correlational design (Gay, 1996). All data on the subjects were derived from BE surveys returned by the respondents (Rundle & Dunn, 1996, 1998, 1999, 2000). The surveys for each respondent contained statements of their preferences while learning and their feelings about others.

The data were classified by nationality, gender, and grade point average for interpretive purposes and analyzed using a Pearson r with the aid of SPSS (Gay, 1996 and *Statistics Package for the Social Sciences, 2003*) (see Appendixes D, E, and F for complete proofs). Descriptive statistics were obtained from Performance Concepts International (Rundle & Dunn, 1996, 1998, 1999, 2000). Two-tailed T-tests for analysis of independent samples and analysis of variance (ANOVA) was calculated on group and individual findings (Gay, 1996).

After the study was completed, students and their advisors received profiles of their individual learning-style preferences along with a homework prescription or study guide. Grade point averages of international participants were compared for results of pre and post test treatment of homework prescriptions.

In scoring the results for each respondent of the SL-ASIA, the researcher "add[ed] up each answer for each question on the scale, then obtain[ed] a total value by summing across the answers for all 21 items" (Suinn, 1992). The total was divided by 21 thereby assigning an acculturation total for each respondent.

The data were classified by semester status for interpretive purposes and analyzed using a Pearson r with the aid of SPSS (Gay, 1996 and *Statistics Package for the Social Sciences*, 2003) (see Appendixes D, E, and F for complete proofs).

The design used to interpret STAI was a correlational design (Spielberger, 1983). A repeated measure design will compare findings among first time international student populations from the Summer Culture and Language Program and Spring Semester in order to "minimize potential multiple-treatment interference" by administering pre and post-tests at least six (6) months apart (Gay, 1996, p.351).

All data on the subjects were derived from the STAI (Spielberger, 1983) surveys returned by the students. The surveys for each respondent contained statements of his or her feelings at the present time and in general. Since Asian students have "a tendency to inhibit positive (anxiety-absent) feelings" (Iwata and Higuchi, 2000, p. 48). Responses to such items were considered.

CHAPTER IV

DATA ANALYSIS

The research reported here was carried out to determine the extent to which anxiety and acculturation are related to the learning styles of Asian college students studying in an American college, as well as the extent to which anxiety and acculturation are related to changes in learning style that may occur over the course of time. Also investigated were the relationships between learning style and the students' gender, nationality and academic achievement.

Description of the Sample

The initial sample of 86 students contained 16 Chinese students, 5 Japanese students, and 65 Korean students. Due to the small number of Japanese students, the analysis reported was based on the 81 Chinese and Korean students only. To include the Japanese sample would threaten the stability of between group comparisons and severely limit the generalizability of the results.

Table 2 indicates the gender and age group composition of the Chinese and Korean student samples. The 16 Chinese students included 3 males (18.8%) and 13 females (81.3%) and the 65 Korean students included 36 males (55.5%) and 29 females (44.6%). A chi-square test indicated that the two nationality groups differed significantly with respect to gender composition (chi-square = 6.90, df = 1, $\underline{p}$ = .009). There were 14 Chinese students in the 18-24 year-old age range (87.5%) and 2 in the 25-34 age range (12.5%). There were 40 Korean students in the 18-24 year-old age range (61.5%) and 25 in the 25-34 year-old age range (38.2%). The two nationality groups differed significantly

with respect to age composition as well (chi-square = 3.89, df = 1, p = .048). Thus differences that might emerge between the two groups in subsequent analyses could be due to gender or age differences.

Table 2

Gender and Age Group Among Chinese and Korean Samples

		Group				
		Chinese		Korean		chi-square
		n	%	n	%	(df =1)
variable	value					
gender	female	3	18.8	36	55.4	
	male	13	81.3	29	44.6	6.90
						(p = .009)
age group	18-24	14	87.5	40	61.5	
	25-34	2	12.5	25	38.5	3.89
						(p = .048)

Table 3 presents the results of independent sample t – tests comparing the Chinese and Korean samples on initial trait anxiety and on initial acculturation. The data in Table 3 indicate the mean initial trait anxiety score among the Chinese students was 42.0 (sd = 10.7) compared to a mean of 37.5 (sd = 6.9) among the Korean students who had scores on this measure. This difference was significant ($t = 2.09$, $df = 78$, $p = .039$). The mean acculturation score among the 16 Chinese students was 2.04 (sd = 0.30), compared to a mean of 1.93 (sd = 0.27) among the Korean students. This difference was not significant ($t = 1.54$, $df = 79$, $p = .611$). Thus the Chinese student sample was more anxious than the Korean student sample initially, but the two groups were comparable on acculturation.

Table 3

Initial Trait Anxiety and Acculturation Among Chinese and Korean Samples

	Group						
	Chinese			Korean			t
variable	n	mean	sd	n	mean	sd	
trait anxiety	16	42.0	10.7	64	37.5	6.9	2.09 (p = .039)
acculturation	16	2.04	0.30	65	1.93	0.27	1.54 (p = .611)

Newly Arrived Students' Learning Styles, by Gender and Nationality

The first research question asked if the learning style profiles of the newly arrived students differed by nationality and gender. A two way multivariate analysis of variance (MANOVA) was performed to answer this question. The dependent variables in this analysis were the initial scores on the 28 learning style subscales. The independent variables were nationality (Chinese vs. Korean) and gender. Table 4 presents the mean and standard deviations of the initial learning style scores, and Table 5 presents the results of the MANOVA. The data in Table 5 indicate that there was no significant multivariate effect due to nationality (Wilks' Lambda = .523, $\underline{F}$ = 1.46, df = 28 and 45, $\underline{p}$ = .124); no significant univariate test due to gender (Wilks' lambda = .652, $\underline{F}$ = 0.86, df = 28 and 45, $\underline{p}$ = .664); and no significant multivariate interaction (Wilks' lambda = .675, $\underline{F}$ = 0.77, df = 28 and 45, $\underline{p}$ = .764. Thus it may be concluded that the Chinese and Korean female and male students had comparable learning style profiles upon arrival.

Table 4

Initial (BE) Learning Style Subscale Means, by Nationality and Gender

	Nationality							
	Chinese				Korean			
	female (n = 12)		male (n = 2)		female (n = 26)		male (n = 36)	
Learning Style subscale	mean	sd	mean	sd	mean	sd	mean	sd
1. Auditory	26.0	36.3	50.0	35.4	26.0	35.7	28.5	32.8
2. Visual Picture	38.5	26.9	62.5	35.4	55.8	23.2	43.4	24.7
3. Visual Word	25.0	31.1	37.5	35.4	39.4	19.6	35.4	22.7
4. Tactual	32.3	37.5	37.5	17.7	60.0	26.2	40.2	26.1
5. Kinesthetic	3.1	32.5	25.0	0.0	5.3	32.8	16.0	37.5
6. Vuditory verbal	-29.7	37.1	68.8	26.5	49.5	36.8	41.0	25.5
7. Analytic Global	-20.6	18.5	-29.7	6.6	-16.1	22.1	-6.3	24.1
8. Reflective Impulsive	-22.9	24.9	-56.3	26.5	-18.8	23.5	-29.2	38.1
9. Sound	-22.9	39.1	-37.5	0.0	-49.0	39.1	-28.1	30.9
10. Light	44.8	37.9	68.8	44.2	43.8	31.9	28.8	38.1
11.Temperature	3.1	20.0	-56.3	61.9	3.1	20.0	16.7	50.5
12. Seating	12.5	39.5	0.0	17.7	58.7	29.5	34.7	36.2
13. Early Morning	-6.3	44.4	-18.8	26.5	-24.5	56.7	-22.9	33.7
14. Late Morning	-1.0	41.4	6.3	8.8	-1.0	41.4	-15.3	37.7
15. Late Afternoon	2.1	23.7	-50.0	70.7	7.7	34.8	7.3	36.6
16. Evening	16.7	53.1	56.3	61.9	33.2	49.4	45.1	40.9
17. Intake	-20.8	25.7	12.5	0.0	-45.2	46.6	-33.3	44.2
18. Mobility	-34.7	33.3	-62.5	17.7	-44.2	41.7	-30.9	43.1
19. Motivation	4.2	24.6	18.8	8.8	4.2	24.6	2.4	20.7
20. Task Persistence	3.1	17.8	12.5	35.4	22.1	31.0	12.8	29.5
21. Conformity	0.0	16.0	6.3	8.8	7.2	24.5	3.1	28.9
22. Structure	-3.1	22.7	0.0	0.0	0.4	25.8	12.5	31.1
23. Alone	-5.0	47.5	-50.0	35.4	5.3	48.0	-11.8	43.2

Table 4

(continued)

	Nationality							
	Chinese				Korean			
	female (n=12)		male (n=2)		female (n=26)		male (n=36)	
Learning Style subscale	mean	sd	mean	sd	mean	sd	mean	sd
24 .Pair	14.6	26.0	68.8	44.2	21.2	42.4	8.7	46.2
25. Small Group	29.2	35.1	68.8	26.5	27.4	36.6	26.7	40.0
26. Large Group	-5.6	31.5	-6.3	26.5	-26.8	39.3	-16.5	42.1
27. Authority	34.4	28.8	43.8	8.8	32.2	36.1	29.9	40.8
28. Variety	6.3	44.8	-12.5	70.7	1.9	52.0	0.7	48.4

Table 5

Multivariate Analysis of Variance of Initial Learning Style Scores by Nationality and Gender

Effect	Wilks' Lambda	F	df	p
Nationality	.523	1.47	28 and 45	.124
Gender	.652	0.86	28 and 45	.664
Nationality x Gender	.675	0.77	28 and 45	.764

Anxiety, Acculturation, and Learning Style

The second research question concerned the relationships between anxiety and acculturation and the students' learning styles over six weeks. This question has several components. I was concerned with: (a) any relationship between either anxiety or acculturation and learning style at the start of the study; and (b) any relationship between either anxiety or acculturation and any changes in learning style that may have occurred after six weeks in the College. This question was addressed by (1) calculating Pearson correlations between anxiety and acculturation and each of the learning style (BE) subscales for each nationality group at the time of the initial testing; and (2) by calculating Pearson correlations between anxiety and acculturation and *changes* in each of the learning style subscales for each nationality group from post-testing six weeks later.

Initial correlations between anxiety and acculturation and the learning style subscales. Table 6 presents the Pearson correlations between the initial measure of anxiety and initial scores on the learning style subscales for each nationality group. In the case of the Chinese student sample, these correlations should be regarded with a skeptical eye, given the extremely small sample size. In the case of both nationality groups, the findings are limited further by the accumulating probability of Type I error associated with performing a large number of significance tests. About one correlation in twenty would be expected to be significant ($\underline{p} < .05$) by chance.

The data in Table 6 indicate four statistically significant relationships within the small Chinese sample. Trait anxiety was related significantly to: (1) a preference for learning in Late Afternoon ($\underline{r} = .63$, $\underline{p} = .017$); (2) a disinterest in learning in the Evening ($\underline{r} = -.56$, $\underline{p} = .036$); (3) a disinclination toward learning in Pairs ($\underline{r} = -.81$, $\underline{p} < .001$); and

(4) a disinterest in learning in Small Groups (r = -.83, p < .001). Again, these findings should be regarded with caution, as the small sample size implies a lack of stability in sample correlations. With respect to the Korean sample, a single significant relationship was observed. Trait anxiety was related positively to motivation (r = .42, p = .001).

Table 6

Pearson Correlations Between Initial Trait Anxiety Scores and Initial (BE) Learning Style

Scores, by Nationality Group

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
1. Auditory	14	-.19	.513	61	-.06	.670
2. Visual Picture	14	-.05	.851	61	-.18	.171
3. Visual Word	14	-.04	.881	61	.16	.219
4. Tactual	14	.02	.945	61	-.13	.338
5. Kinesthetic	14	-.36	.208	61	-.00	.998
6. Auditory Verbal	14	-.17	.562	61	-.22	.090
7. Analytic Global	14	.20	.502	61	-.20	.132
8. Reflective Impulsive	14	.29	.313	61	-.00	.983
9. Sound	14	.04	.882	61	.09	.481
10. Light	14	-.11	.697	61	-.10	.414
11. Temperature	14	.39	.166	61	-.01	.928
12. Seating	14	-.04	.887	61	-.22	.092
13. Early Morning	14	.48	.080	61	.22	.091
14. Late Morning	14	-.29	.311	61	.21	.099
15. Late Afternoon	14	.63	.017*	61	.00	.976
16. Evening	14	-.56	.036*	61	-.21	.108
17. Intake	14	-.37	.186	61	-.25	.054
18. Mobility	14	.09	.751	61	.07	.612
19. Motivation	14	.40	.154	61	.42	.001***
20. Task Persistence	14	-.27	.356	61	-.01	.947

Table 6

(continued)

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
21 Conformity	14	-.28	.339	61	.04	.787
22. Structure	14	-.13	.661	61	.04	.738
23. Alone	14	.44	.115	61	.17	.192
24. Pair	14	-.81	.000***	61	.03	.806
25. Small Group	14	-.83	.000***	61	.15	.257
26. Large Group	14	-.43	.122	61	.17	.199
27. Authority	14	.30	.296	61	-.03	.809
28. Variety	14	-.41	.143	61	-.09	.516

* $p < .05$

*** $p < .001$

Table 7 presents the corresponding correlations between initial scores on the acculturation measure and the initial scores on the learning style subscales. The data in Table 7 indicate no significant relationships between initial acculturation and any of the of the learning style subscales for either the Chinese student group or the Korean student group. This finding suggests that acculturation was not related to learning style at the start of the study.

Table 7

Pearson Correlations Between Initial Acculturation Scores and Initial (BE) Learning Style

Scores, by Nationality Group

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
1. Auditory	14	.27	.355	62	.11	.397
2. Visual Picture	14	.32	.270	62	.09	.476
3. Visual Word	14	.16	.881	62	.03	.839
4. Tactual	14	-.03	.928	62	-.13	.338
5. Kinesthetic	14	-.35	.214	62	.08	.536
6. Auditory Verbal	14	-.07	.807	62	-.12	.365
7. Analytic Global	14	-.16	.593	62	.06	.672
8. Reflective Impulsive	14	-.10	.725	62	.08	.546
9. Sound	14	-.22	.441	62	-.12	.361
10. Light	14	-.03	.928	62	-.16	.205
11. Temperature	14	-.13	.670	62	-.12	.369
12. Seating	14	.37	.196	62	.11	.391
13. Early Morning	14	.18	.538	62	.03	.827
14. Late Morning	14	.16	.577	62	.20	.124
15. Late Afternoon	14	-.05	.877	62	.10	.424
16. Evening	14	-.11	.715	62	-.03	.806
17. Intake	14	-.36	.202	62	-.16	.208
18. Mobility	14	.08	.800	62	-.10	.442
19. Motivation	14	.02	.941	62	-.10	.433
20. Task Persistence	14	.33	.246	62	.03	.813

Table 7

(continued)

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
21. Conformity	14	.15	.604	62	.06	.642
22. Structure	14	-.07	.811	62	.04	.751
23. Alone	14	.14	.639	62	-.19	.141
24. Pair	14	-.15	.605	62	.12	.373
25. Small Group	14	-.31	.274	62	.14	.297
26. Large Group	14	-.16	.597	62	.02	.907
27. Authority	14	.03	.921	62	.09	.472
28. Variety	14	-.26	.365	62	.12	.358

Correlations between initial anxiety and acculturation scores and changes in Learning Style subscale scores. Also of interest was whether student anxiety and/or acculturation would be related to changes in learning style that might take place over the course of the six-week semester. This question has two components: (1) whether there were in fact any changes in learning style within either group; and (2) whether such changes were related to anxiety and/or acculturation.

In order to address the first of these two component questions, correlated sample t-tests were run on each of the nationality groups to assess the significance of changes from initial testing to six weeks later on each of the learning style subscales.

The results of these tests are presented in Tables 8 and 9. Table 8 shows the results of the tests for the 14 Chinese students. The data in Table 8 indicate that over the course of the two semesters there were significant changes on only three of the 28 learning style subscales: (1) a significant increase in Kinesthetic ($t = -3.32$, $df = 13$, $p = .006$); (2) a significant decrease in Motivation ($t = 2.62$, $df = 13$, $p = .021$); and a significant increase in Variety ($t = -2.8$, $df = 13$, $p = .040$). Table 9 presents the corresponding tests for the Korean student sample. The data in Table 9 indicate that the Korean students demonstrated significant changes on two of the learning style subscales. They increased significantly on the Evening subscale ($t = -2.12$, $df = 61$, $p = .038$); and they showed a significant decrease on the Task Persistence subscale ($t = 2.26$, $df = 61$, $p = .027$). These findings should be regarded with caution, due to the accumulating probability of Type I error associated with large numbers of hypothesis tests.

Table 8

Paired Sample T-test for Significance of Changes on Learning Style Subscales from Initial Testing to Six Weeks Later for Chinese Student Sample (n = 14)

	Testing					
	Initial Testing		Post –test			
Learning Style subscale	mean	sd	mean	sd	t	p
1. Auditory	29.46	35.89	33.04	26.68	-0.47	.645
2. Visual Picture	41.96	28.00	47.32	27.81	-1.39	.189
3. Visual Word	26.78	30.56	33.92	19.26	-0.92	.372
4. Tactual	33.04	34.88	46.42	32.31	-1.45	.170
5. Kinesthetic	6.25	30.91	19.64	29.71	-3.32	.006**
6. Auditory Verbal	36.61	37.49	43.75	27.63	-0.95	.358
7. Analytic Global	-21.87	17.46	-16.51	14.63	-1.71	.111
8. Reflective Impulsive	-27.67	26.93	-16.07	26.60	-2.01	.066
9. Sound	-25.00	36.36	-34.82	44.45	0.86	.403
10. Light	48.21	37.93	42.85	33.51	0.90	.385
11. Temperature	-5.36	33.15	-11.61	44.52	0.62	.545
12. Seating	10.71	36.97	15.18	54.19	-0.31	.759
13. Early Morning	-8.04	41.78	-4.46	42.35	-0.37	.718
14. Late Morning	0.00	38.29	-10.71	39.18	0.93	.368
15. Late Afternoon	-5.36	34.92	0.00	27.74	-0.41	.690
16. Evening	22.32	53.75	33.93	51.52	-0.71	.490
17. Intake	-16.07	26.60	-15.18	26.93	-0.09	.934
18. Mobility	-38.39	32.69	-33.93	51.52	-0.77	.455
19. Motivation	6.25	23.39	-3.57	17.97	2.62	.021*
20. Task Persistence	4.46	19.37	8.92	20.47	-0.57	.578
21. Conformity	0.89	15.08	-4.46	19.37	0.72	.487

Table 8

(continued)

	Testing					
	Initial Testing		Post –test			
Learning Style subscale	mean	sd	mean	sd	t	p
22. Structure	-2.67	20.90	0.89	21.07	-0.62	.547
23. Alone	-11.61	47.65	-3.57	38.11	-0.95	.359
24. Pair	22.32	33.31	26.79	35.31	-1.00	.336
25. Small Group	34.82	36.09	33.04	38.48	0.26	.797
26. Large Group	-5.71	29.89	-4.46	37.85	-0.16	.878
27. Authority	35.71	26.79	26.79	36.97	0.77	.453
28. Variety	3.57	46.11	17.86	52.28	-2.28	.040*

* $p < .05$

** $p < .01$

Table 9

Paired Sample T-test for Significance of Changes on Learning Style Subscales from Initial Testing to Six Weeks Later for Korean Student Sample (n = 62)

	Testing					
	Initial Testing		Post –test			
Learning style subscale	mean	sd	mean	sd	t	p
1. Auditory	27.41	33.79	29.83	37.69	-0.55	.585
2. Visual Picture	48.59	24.70	52.21	30.91	-1.17	.247
3. Visual Word	37.09	21.34	39.71	28.77	-0.78	.438
4. Tactual	44.76	26.44	44.15	28.78	0.18	.861
5. Kinesthetic	11.49	35.74	18.55	42.38	-1.43	.158
6. Auditory Verbal	44.56	30.75	44.15	37.03	0.11	.915
7. Analytic Global	-10.38	23.61	-7.30	28.13	-0.96	.342
8. Reflective Impulsive	-24.80	32.99	-22.78	37.77	-0.39	.702
9. Sound	-36.90	41.20	-38.10	45.24	0.25	.801
10. Light	35.08	36.13	34.27	40.55	0.17	.863
11. Temperature	16.93	48.97	17.74	45.86	-0.18	.861
12. Seating	44.76	35.40	39.11	39.95	1.22	.226
13. Early Morning	-23.59	44.42	-17.94	52.72	-0.93	.354
14. Late Morning	-13.91	40.56	-9.48	46.70	-0.80	.427
15. Late Afternoon	7.45	35.60	5.44	40.53	0.35	.727
16. Evening	40.12	44.65	51.81	36.97	-2.12	.038*
17. Intake	-38.31	45.26	-32.45	46.19	-1.16	.249
18. Mobility	-36.49	42.72	-28.02	44.10	-1.44	.155
19. Motivation	9.07	24.91	11.29	24.24	-0.65	.516
20. Task Persistence	16.73	30.28	9.07	30.04	2.27	.027*
21 Conformity	4.84	27.01	7.26	34.88	-0.48	.633
22. Structure	7.45	29.46	18.15	35.55	-1.94	.057
23. Alone	-4.64	45.67	6.05	49.00	-1.97	.053
24. Pair	13.91	44.70	17.13	42.42	-0.44	.660
25. Small Group	27.01	38.29	25.81	37.73	0.25	.805
26. Large Group	-20.84	40.96	-25.20	49.15	0.86	.392

Table 9 (continued)

	Testing					
	Initial Testing		Post –test			
Learning style subscale	mean	sd	mean	sd	t	p
27. Authority	30.85	38.59	33.67	40.02	-0.62	.535
28. Variety	1.21	49.52	-7.46	54.91	1.12	.267

* $p < .05$

Having established that neither the Chinese student group nor the Korean student group changed a great deal on the learning style subscales, Pearson correlations were run between the anxiety and acculturation scores and *changes* on each of the learning subscales that occurred over the six-week semester were related to initial levels of anxiety and/or acculturation. These correlations are presented in tables 10 and 11.

Table 10 pertains to initial anxiety. The data in Table 10 indicate a single significant relationship between initial anxiety and change in learning style within the Chinese sample. There was a negative relationship between initial anxiety and the magnitude of increases in scores on the authority subscale over six weeks ($r = .74$, $p = .003$). This means that students who had relatively high levels of anxiety initially tended to manifest smaller increases on the Authority subscale than did students with relatively low levels of initial anxiety. Within the Korean student sample, three significant correlations were observed: (1) initial anxiety was related positively to increases in scores on the Auditory scale ($r = .29$, $p = .025$); (2) initial anxiety was positively related to increases in the Evening scale ($r = .29$, $p = .038$); (3) anxiety was related negatively to increases in scores on the Motivation subscale ($r = -.36$, $p = .005$).

Table 11 presents the corresponding correlations with respect to initial acculturation. The data in Table 11 indicate a single significant correlation within the Chinese student sample: Initial acculturation was related negatively to increases in scores on the Late Morning subscale ($r = -.56$, $p = .038$). There was also a single significant correlation within the Korean student sample: Initial acculturation was related positively to increases on the Intake subscale

(r = .34, p = .007). These findings should be evaluated against the fact that one hypothesis test in 20 is expected to be significant beyond the .05 level by chance.

Table 10

Pearson Correlations Between Initial Trait Anxiety Scores and (Post -Initial) Changes in (BE)

Learning Style Scores, by Nationality Group

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
1. Auditory	14	.50	.067	61	.29	.025*
2. Visual Picture	14	.11	.714	61	.17	.190
3. Visual Word	14	.30	.296	61	.00	.990
4. Tactual	14	-.06	.835	61	.10	.439
5. Kinesthetic	14	.12	.685	61	.22	.094
6. Auditory Verbal	14	.39	.168	61	.04	.747
7. Analytic Global	14	-.20	.504	61	.12	.373
8. Reflective Impulsive	14	.15	.600	61	-.17	.186
9. Sound	14	.11	.700	61	-.08	.528
10. Light	14	.03	.918	61	-.02	.892
11. Temperature	14	.33	.246	61	.02	.892
12. Seating	14	.45	.109	61	.29	.023
13. Early Morning	14	.11	.712	61	-.14	.272
14. Late Morning	14	.05	.857	61	.00	.996
15. Late Afternoon	14	-.42	.135	61	.08	.525
16. Evening	14	.42	.135	61	.27	.038*
17. Intake	14	.38	.184	61	.04	.787
18. Mobility	14	.03	.850	61	-.11	.420
19. Motivation	14	-.27	.344	62	-.36	.005**

Table 10

(continued)

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
20. Task Persistence	14	.50	.068	61	.09	.470
21 Conformity	14	-.06	.850	61	.10	.426
22. Structure	14	.26	.371	61	.14	.285
23. Alone	14	.03	.908	61	-.18	.161
24. Pair	14	.08	.787	61	.15	.244
25. Small Group	14	.21	.462	61	-.06	.645
26. Large Group	14	.08	.794	61	-.21	.102
27. Authority	14	-.74	.003**	61	.06	.627
28. Variety	14	.01	.972	61	-.14	.297

* $p < .05$

** $p < .01$

Table 11

Pearson Correlations Between Initial Acculturation Scores and Changes (Post- Pre) in (BE)

Learning Style Scores, by Nationality Group

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
1. Auditory	14	-.05	.879	62	.09	.474
2. Visual Picture	14	-.23	.427	62	-.04	.763
3. Visual Word	14	-.34	.235	62	.18	.174
4. Tactual	14	-.04	.904	62	.18	.164
5. Kinesthetic	14	.02	.952	62	-.03	.826
6. Auditory Verbal	14	.42	.132	62	.17	.192
7. Analytic Global	14	.37	.192	62	-.13	.311
8. Reflective Impulsive	14	.09	.766	62	.01	.940
9. Sound	14	.02	.949	62	.04	.787
10. Light	14	.37	.194	62	-.01	.920
11. Temperature	14	-.14	.630	62	.19	.149
12. Seating	14	-.12	.676	62	.06	.663
13. Early Morning	14	-.18	.545	62	.04	.755
14. Late Morning	14	-.56	.038*	62	-.17	.192
15. Late Afternoon	14	-.01	.963	62	-.10	.447
16. Evening	14	.22	.446	62	.05	.724
17. Intake	14	.42	.133	62	.34	.007**
18. Mobility	14	-.06	.850	62	.09	.511
19. Motivation	14	.22	.443	62	-.18	.172
20. Task Persistence	14	-.28	.342	62	-.07	.608

Table 11

(continued)

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
21. Conformity	14	-.30	.301	62	-.03	.810
22. Structure	14	-.11	.703	62	.13	.310
23. Alone	14	-.16	.596	62	.21	.105
24. Pair	14	.08	.787	62	-.15	.231
25. Small Group	14	.17	.572	62	-.15	.253
26. Large Group	14	.27	.353	62	-.12	.357
27. Authority	14	-.21	.477	62	.00	.968
28. Variety	14	-.27	.350	62	-.00	.987

* $p < .05$

** $p < .01$

Relationships between GPA and changes in Learning Style subscales. An additional analysis was performed to determine whether there were any significant relationships between the students' grades at the onset of the initial six-week summer semester and changes in the learning style subscales over six weeks between the initial and post-measures of learning style. Pearson correlations were calculated for students in each nationality group to address this question. These correlations are presented in Table 12. Three statistically significant correlations were observed in the Chinese student sample: (1) GPA was related positively to increases on the Sound scale ($r = .56$, $p = .036$); (2) GPA was related positively to increases on the Late Morning/Early Afternoon learning style subscale ($r = .58$, $p = .031$); and GPA was related negatively to increases on the Late Afternoon learning style subscale ($r = -.57$, $p = .032$). No significant correlations were observed in the larger Korean student sample.

Summary of Quantitative Analysis

There were no differences associated with nationality or gender of the learning style profiles of newly arrived Chinese and Korean students. Within the Chinese student sample, initial trait anxiety scores were related positively to scores on the Late Afternoon learning style subscale, and negatively to scores on the Evening, Pair, and Small Group learning style subscales. Within the Korean student sample, initial anxiety was related positively to scores on the Motivation learning style subscale. Initial acculturation scores were not related significantly to any of the initial learning style subscale scores in either group.

The two groups demonstrated relatively few significant changes in learning style from the initial testing to six weeks later. The Chinese students increased on the

Kinesthetic and Variety subscales, and decreased on the Motivation subscale. The Korean students increased on the Evening subscale and decreased on the Task Persistence subscale.

Table 12

Pearson Correlations Between Course Grades After Six-week Summer Session and Changes (Post-Pre) in (BE) Learning Style Scores, by Nationality Group

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
1. Auditory	14	.18	.525	62	-.21	.110
2. Visual Picture	14	-.04	.895	62	.12	.355
3. Visual Word	14	.42	.136	62	.06	.646
4. Tactual	14	-.44	.118	62	.10	.456
5. Kinesthetic	14	.09	.751	62	-.11	.409
6. Auditory Verbal	14	.18	.532	62	.11	.381
7. Analytic Global	14	.06	.842	62	-.21	.110
8. Reflective Impulsive	14	.18	.532	62	.12	.355
9. Sound	14	.56	.036*	62	.06	.646
10. Light	14	-.13	.640	62	.10	.456
11. Temperature	14	.05	.859	62	-.11	.409
12. Seating	14	.28	.325	62	.11	.381
13. Early Morning	14	.32	.316	62	-.21	.096
14. Late Morning	14	.58	.031*	62	.10	.444
15. Late Afternoon	14	-.57	.032*	62	-.08	.547
16. Evening	14	.16	.572	62	-.19	.146
17. Intake	14	.25	.381	62	.05	.712
18. Mobility	14	-.05	.867	62	.16	.215
19. Motivation	14	.26	.377	62	.24	.065
20. Task Persistence	14	.18	.538	62	-.05	.722

Table 12

(continued)

	Group					
	Chinese			Korean		
Learning Style	n	r	p	n	r	p
21. Conformity	14	.44	.114	62	.03	.762
22. Structure	14	.25	.393	62	.03	.799
23. Alone	14	.18	.541	62	-.16	.213
24. Pair	14	.13	.667	62	.03	.831
25. Small Group	14	-.29	.322	62	-.02	.880
26. Large Group	14	-.04	.896	62	-.13	.328
27. Authority	14	-.50	.073	62	-.13	.303
28. Variety	14	.11	.710	62	.15	.227

* $p < .05$

** $p < .01$

Among the Chinese students, initial anxiety was associated with decreases in the authority subscale over the six-week semester. Among the Korean students, initial anxiety was associated with increases on the Auditory and Evening learning style subscales and decreases in the Motivation subscale. Among the Chinese students, initial acculturation was associated with increases in the Late Morning learning style subscale. Among the Korean students initial acculturation was associated with increases in the Intake subscale.

Among the Chinese students, grades at the end of the six-week summer session were related positively to increase over six weeks on the Sound and Late Morning learning style subscales, and negatively to increases on the Late Afternoon learning style subscale. No significant relationships were observed within the Korean student sample between grades after six weeks and changes in any of the learning style subscales.

All correlational findings for the small Chinese student sample should be regarded with extreme caution, due to the instability of correlations with such a small sample.

Qualitative Analysis

As a means of acquiring more insight into results of quantitative analysis, qualitative methods were used in this study. Focus group meetings with a convenience sample of students in the population and their teachers were conducted by the researcher following one year of student study at the institution. Fifteen randomly selected students and five of their instructors agreed to participate in responding to the focus group questions of this study.

Student Focus Group

Fifteen students participated in a focus group. Table 13 presents the focus group questions and selected student responses. The students were asked to describe their reactions to their first American classes. All but one thought the lessons were difficult, and the students were surprised and confused by the methods used by the teachers. They were also surprised by the classroom responses of American students. Only one student responded that the lessons were familiar and similar to those at her home institution. Two students reported that they felt relaxed and open, and one stated that she felt free to express her own opinions and ideas.

On the other hand, one student reported that she felt shy and unable to participate, and six others said that they felt there were many difficult words, and that the teachers and the other students spoke too quickly for them to understand. Four students said that they liked the way Americans freely present their opinions, enjoyed the variety of activities, and felt comfortable.

Table 13
Student Focus Group Questions and Selected Responses

QUESTIONS	C	K
1. a. When you came here, what was your reaction to your first American class?	Difficult `` Confused`	Shy ` Difficult `` Worried ` Surprised ` Shocked ` Liked it ``
1.b. How did you feel about the style and methods of presentation?	Opening ` Relaxed ` N/A ` Similar `	Unfamiliar ` Nervous ` Free `
2.a. How is the classroom learning different between your and American classes?	More groups ` ` More speaking ` ` `	More speaking ` ` ` ` ` ` `
2.b. What have you done to adapt to this?	Try to adapt ` `	Try to adapt ```````
3. How do you react if you hear students call professors by their first names, or openly criticize, argue, and interrupt one another?	Not polite `` Friendly ```	Rude ``` Surprise ``` Friendly `
4.a. What do you do if a teacher asks you for your opinion or analysis of a particular problem? What about expressing viewpoints during classroom discussions?	Express view `````	Express view ``
4.b. If there is an essay or paper, do you concentrate on the facts and information or on your own idea and opinions? Why?	Opinion ``` Facts +opinion ``	Opinion `` Facts + opinion `` Facts `
4.c. What difficulties have you encountered in writing a research paper?	Language ```	Citations ``
5. a. Americans typically value independence of thought, competition, and "do it yourself" attitudes. Contrast this with the Chinese or Korean emphasis on relationships with others, politeness, cooperation, harmony, respect, and "saving face".	American independence `` Asian cooperation `	American independence ` Asian Cooperation ```
5.b. What advice would you give to teachers and fellow students?	Adapt ` Respect ` Accept `	Understand differences ``` Respect `
6. a. What do you think about the tests and examinations?		Similar
6.b. What kind of test do you prefer (essay, multiple choice, oral exam)? Why?	Oral `` Multiple choice `````	Oral ` Essay `` Multiple choice ````
6.c. What place does memorization play in your own way of learning?	Important ````	Important ```
6.d. How do you study for an examination (i.e., group learning, individual preparation, memorization of textbooks, handouts, and lecture notes)?	Group ` Handouts ```` Memorize ``	Group `` Handouts `` Memorize````
6.e. Do you like handouts?	Yes````	Yes``

6.f. Should the professor use overheads and electronic presentations?	Yes ``	Yes ` No `
7. If someone gave you a really bad grade but you felt you should have a better grade, what would you do?	Ask ```` Accept `	Ask ```` Accept ``
8. When you encounter difficult subjects with a lot of specialized vocabulary or new concepts (i.e., philosophy, science, economics, finance, technology) how do you prepare for these?	Preview ``` Memorize ``	Preview ```` Ask ` Memorize ``
9.a. What advice would you give me to help me teach Chinese or Korean students better: How can I help them learn? If you could, what would you change about the way American teaching and learning is done?	Inspire students `` Be patient ` Speak slowly ` Print, not write `	Understand styles ``` Show care ` Encourage speaking ``

When asked how the classroom learning was different from that in their classrooms in their own countries, and how they have adapted to this, all responded they had studied English for eight to ten years, where reading and writing English was very important. However, in their studies at home they did not speak English very much. This was important, because American classes are characterized by more student participation and student speaking. In contrast, Asian classes were teacher directed and the students just listened. Therefore, in order to participate, they memorized words and practiced saying them. They recognized that American students felt free to express their own opinions and eat and drink snacks during class, while Asians would be afraid to speak out, and eating would be considered inappropriate.

All but one of the participating focus group students indicated that they tried to adapt and tried to ask questions and express thoughts. After one semester, all students became comfortable bringing snacks to class. All the students suggested that the American education style provides opportunities for students to think for themselves. Although it was not easy for them to adapt, they said that they were beginning to feel comfortable. They said that they particularly tried to adapt to lessons that were conducted by teacher guides, rather than by lecturers.

Five Chinese students agreed that Chinese classes are large, and everyone cannot share ideas. They said that in China students typically just listen to the professors. In American classes, teachers often make students consider particular questions and attempt to solve them individually or in groups. In America there is much group work and many different activities. This aspect of the American classroom clashes with the Chinese Confucian-oriented approach, in which the teacher is the exemplar from whom

knowledge flows, and students observe, respect, and obey (Lehman, 2002). The Asian students who became more comfortable with the American classroom environment reported that they enjoyed the differences. The reactions of Asian students to American students addressing professors by their first names differed. Three said that they were surprised; four thought it was friendly; and eight were shocked and thought the behavior rude and disrespectful.

Students were asked to compare and contrast the American values of independence of thought, competition, and "do it yourself" attitudes with the [Chinese, Japanese, or Korean] emphasis on relationships with others, politeness, cooperation, harmony, respect, and "saving face". The students were asked what advice they would give to teachers and fellow students. All students recognized American independence as compared with Asian harmony and cooperation. However, they could not say which they preferred. While their Asian culture emphasized harmony, most students experienced group projects for the first time and felt shy. They felt that each culture should make attempts to understand differences. However, they did not necessarily feel the need to change their values. This observation is consistent with the relatively minimal changes in learning style that occurred among the students over their two semesters in an American liberal arts college.

The students were asked to reflect upon tests and examinations. Three students preferred oral exams and two indicated a preference for essays in order to perfect their English language skills. Eleven reported that they preferred multiple choice tests and exams. Several Chinese students said that free thinking and expressing their own viewpoints were new concepts to them. They reported the memorization of content

material was the method that had been taught to them at home, and it remained their method of choice. Three students reported that they prepared for exams in groups; and six said that they used handouts. All reported that they memorized material. Of those who used handouts, only one said that he did not enjoy electronic presentations. When asked how they respond to teachers asking for opinions or analysis of problems, or expressing viewpoints during class, all said that they tried to express their points of view. One student indicated that she loves to debate and discuss anything now and is willing to express her own viewpoints to the class. Two students stressed that they attempt to combine facts with their opinions. The students indicated that writing research papers presented problems. Several commented on the difficulties they experienced, citing in particular, difficulty they experienced in citing sources. They said that in Korea, professors are not strict about research papers; it is not necessary to cite sources.

Encountering difficult subjects with much specialized vocabulary or new concepts encouraged all students to read the test and preview material alone before class. Four students stated that they memorized the concepts, and one reported asking questions of a tutor.

Twelve students said they would complain and ask the instructor for the reasons of a particular grade if they felt they received a grade they did not deserve. However, three students said they would merely accept a bad grade, even if they felt they did not deserve it. Then when asked how American instructors could help Asian students learn, three said that the professors should seek to understand different learning styles, and six said the professors should strive to inspire and encourage students.

Teacher Focus Group

Table 14 presents the questions used in the teacher focus group and the responses of the five participating teachers. The five instructors were asked what they knew about international student learning and learning styles. Teacher 1 said she knew Gardner's theories regarding multiple intelligences and learning styles. She added, "Everyone in all cultures has a diversity of learning styles. International students are very well trained in memorization, look and learn text based. I don't think there is much training in diversity of learning styles. Our educational system differs from Asian styles as they are focused on traditional learning methods." These are the methods used in the U.S. in the 50s and 60s. Teacher 5 reported that she was familiar with and had an understanding of Gardner, Dunn and Dunn, and Kolb with regard to their studies on learning styles. She agreed with Teacher 1 and stated, "International student learning was based on the Confucian style of teacher directed learning and memorization." All others nodded in agreement.

When asked if the teachers adapted their teaching methodologies to meet the needs of international students, Teacher 1 said, "I very much adapt, provide audio-visual, reinforce oral methods—also try to appeal to different learning styles (music, movement, interactive work that I do with any student—which they may or may not know are good for them even though they may not be aware, they may tend to gravitate toward these methods which are newer to International students than to American students." Teacher 2 provided more repetition type lessons to international students than to American students. She gave them added time to express themselves and brought them to the library so they could interact with authority figures other than the teacher. She felt they were less inhibited with non-teachers.

Teacher 5 adapted her lessons to include more memorization, but tried to introduce various other methods of critical thinking into her lessons. Teachers 2 and 3 (one Chinese and one Korean) merely nodded in agreement and appeared to be less comfortable contributing answers of their own.

When asked what the teachers did when international students were reluctant to participate in class activities, Teacher 3 said she spoke with them after class and tried to encourage participation. Teacher 2 took no volunteers, just went around the class and asked for participation. Teachers 1 and 5 agreed while Teacher 4 said she tried to make eye contact and when students' eyes dropped, she went on to someone else. All instructors said they praised the students and chose questions to which the students might respond or those with cultural implications as not to embarrass them.

All instructors were familiar with the comfort level of students with regard to assessment. They observed that Asian students preferred multiple choice or true/false questions on written exams. However, all instructors offered options for assessment. Some assessments were oral, written (essay), multiple choice, true/false, and performance (presentations) even though students were often shy.

All teachers provided additional worksheets, handouts, and class notes to all students, including American students. Three permitted tape recorders in order for the student to record the lessons. Often the pace of a mixed international and American class may be problematic, so this teacher chose groups that could work together at the same level or within the same language for presentations. The teachers said their classes were challenging for all students so they made fairly diverse lesson plans to reach all students.

Two teachers expressed the idea that it was the teachers' responsibilities to create diverse plans and address student needs.

All have noticed changes in comfort level as the student became used to the structure and professor's expectations. They became really relaxed and began to ask for help. Even if language skills had not evolved—ease was present.

While this study did not indicate changes in learning styles of international students, the findings of the teacher focus group meetings indicated teacher awareness of cultural differences in international student learning. Learning style research suggested that students whose learning styles were addressed "achieve[d] 0.75 of a standard deviation higher than those who did not have their learning styles accommodated" (Lewthwaite, 1999, p.5). In addition, addressing global learning needs by creating classrooms where cultural diversity is present, the Dunn and Dunn Model addressed and synthesized many learning style preferences of students as it is based on instructional environment, resources, approaches, and strengths (Dunn and Griggs, 2003).

Table 14
Teacher Focus Group Response Table

Dimensions of Contrast	T-1	T-2	T-3	T-4	T-5
Has Awareness of Learning-Styles	1	2	2	2	1
Adapts Teaching Methodologies	1	1	1	1	1
Uses Repetition Drills	1	1	1	1	1
Speaks More Slowly	1	1	1	1	1
Uses Multiple /DiverseStyles	1	0	0	0	1
Teach with Lectures	2	2	2	2	2
Engages Students by Going Around the Room	1	1	1	1	1
Addresses Students with Comfortable Questions	1	2	2	2	1
Makes Eye Contact	0	0	1	0	1
Assesses with Multiple Choice	1	1	1	1	1
Assesses with True/False	1	1	1	1	1
Assesses with Presentations	1	1	2	2	1
Assesses with Essays	1	1	2	2	1
Offers Additional Time to International Students without Being Asked	2	1	1	1	1
Offers Additional Time to International Students if Asked	1	1	1	1	1
Offers Additional Time to American Students if asked	1	0	0	0	1
Offers Worksheets	2	0	0	0	1
Offers Handouts	2	0	0	0	2
Offers Notes	2	0	1	1	1
Permits Use of Tape Recorders	1	1	0	0	1
American Students Object to Preferential Treatment	2	2	2	2	2
Feels Need to Change Teaching Methods	2	1	1	0	2
Is Asian	2	2	1	1	2
Is American	1	1	2	2	1

N/A = 0
Yes = 1
No = 2

T1=teacher 1
T2=teacher 2
T3=teacher3
T4=teacher 4
T5=teacher 5

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The study reported here was designed to investigate learning style differences among Asian students studying in a US liberal arts college. The study was focused on differences associated with nationality, anxiety, and acculturation. The study also examined changes in learning style that occurred over a six-week semester in the American college.

The genesis of the study described here lies in the literature on learning styles, which suggests that students differ in their preferences for various instructional modalities, and that matching students' preferred learning styles in the classroom results in more efficient learning. There is evidence that learning styles tend to differ with nationality and culture. Research conducted by Brown suggested that raising cultural awareness and the level of pedagogical skills enabled teachers to communicate effectively with culturally diverse students and their families in order to reduce anxiety and enhance the learning experience of all (2004). While Brown's research focused on students K-12, Dunn and Griggs suggested that young and adult learners alike shared in the commonality of having unique learning styles; they "concentrate, process, and remember new and difficult information under very different conditions" (1995, p. 15). Fazey and Marton (2002) concurred. They, too, suggested that there were various methods used by a learner in order to comprehend something. Each individual "discerned" or grasped particular information and retained it based on prior knowledge or experience or "frame of reference" or perspective (pp. 237-238). In order to effectively transmit knowledge, instructors needed to understand how learners interpreted content

material. Bennett (1986) suggested altering approaches to teaching in order to meet student needs. The study described here was designed to explore these principles within the population of students from Asian countries studying in a US liberal arts college for the first time.

Both quantitative and qualitative methods were employed in the study. Due to limited numbers of students in all but one nationality (Korean) the quantitative findings are of somewhat limited generalizability. The qualitative findings were more informative, although these findings as well should be evaluated primarily in relation to the limited number of students and faculty who participated in focus group interviews at the conclusion of the study.

Summary of Findings

The quantitative findings suggested that the learning style profiles of the Asia students studied did not differ at the start of their studies in the US on the basis of either nationality (Chinese vs. Korean) or gender. Chinese students were somewhat more anxious than Korean students when they began studying in the US, but students from the two countries did not differ on level of acculturation. Although the very small number of Chinese students in the study (n = 14) precludes confident generalization, it was observed that within this group initial anxiety was related positively to a preference for Late Afternoon learning and negatively to a preference for Evening study. Within this group anxiety was also related negatively to a positive disposition toward studying in Pairs or in Small Groups. Among the larger Korean sample, initial anxiety was related only to motivation. Acculturative orientation (more Asian vs. more American) was not related significantly to learning style.

Over the orientation six-week semester of study in America, the Asian students did not change very much in terms of learning style. The Chinese group increased in preference for Kinesthetic learning activities and Variety, but they decreased on the learning style Motivation subscale. The Korean students increased in their positive disposition toward Evening study, and they decreased in Task Persistence.

Results of the STAI (Spielberger, 1983) indicated that anxiety was largely unrelated to the changes that occurred in the learning styles of the Asian students under study. However, among the Chinese students there was a positive relationship between initial anxiety and increases on preference for Authority. Among the Korean students initial anxiety was related to increases in a positive disposition toward Auditory learning and toward study in the Evening; and initial anxiety was related negatively to Motivation.

Acculturation also was not broadly related to changes in learning style. Among the Chinese group, a more American acculturative orientation was associated with decreased preference for Later Morning or Early Afternoon study. Among the Korean sample a more American orientation was associated with increased scores on the Intake learning style dimension.

Grades received at the conclusion of the students' six-week orientation period were not strongly related to changes in learning style. Among the Chinese group higher initial grades (a proxy for English language skills) was related to increased preference for Sound and for Late Morning learning, and to decreases in a positive disposition toward Late Afternoon/Evening learning.

The qualitative study provided greater insight into the responses of the Asian students to the new learning environment. Focus group responses indicated clearly that

the Asian students were accustomed to formal, authoritative presentations from the instructor to the students, with little opportunity for students to share their observations or opinions. The Asian students were oriented toward memorizing, and they tended to work alone. Thus the students in the focus groups commented on the extensiveness of the exchange between teacher and students in the American classrooms, as well as on the informality of the relationship between teacher and students and the inclusion of small group learning projects.

The instructors who participated in the teacher focus group made it very clear that they were aware of the learning style differences of foreign students, and that they made special efforts to accommodate these differences. Specifically, the instructors noted that they made efforts to help their Asian students to participate and to express themselves in class. They also made a special effort to incorporate diverse learning activities and to provide multiple options for assessment when possible. Both students and instructors noted that the students became more comfortable with the American learning environment rather quickly.

Conclusions

The results of the study provide reason for an optimistic assessment of the response of Asian students to the new learning environment, as well as for a positive evaluation of the response of the instructional staff to the learning style differences of Asian students. Although the Asian students were clearly surprised by aspects of the American classroom that differed markedly from their prior learning experiences in Asia, they generally adapted quickly and comfortably. This was no doubt facilitated by the awareness of the instructors of the Asian students' familiarity with formal instruction

directed almost entirely from teacher to student, with memorization, and with individual study rather than paired study or group study efforts. The results of the quantitative portion of the study make it clear that the Asian students did not change very much in their learning styles over the course of six weeks here, but the student responses in focus groups suggest strongly that they were able to adapt and to function quite well in learning situations that were quite different from what they had experienced in their home countries. The Asian students showed that they could adapt to the informality and interchange that characterizes the American classroom, even though they may still feel more comfortable listening and taking notes from an authoritative instructor.

One conclusion that is quite clear from the focus group responses is that the English language training received by students in their home countries before coming to the US could be improved by a greater emphasis on oral communication skills, rather than the almost complete focus on reading and written English that appears to characterize English language instruction at present. Given the expectation in the American classroom for student participation, it is important that Asian students arrive with good skills in spoken English. Failing this, the culturally based tendency of Asian instruction to be one-directional from teacher to student will be exacerbated by reluctance to participate based on apprehensions regarding poor skills in spoken English. Failing a change in the Asian approach to instruction in the English language, it is certainly important for Asian students who are about to begin college studies in the US to have a thorough and extensive orientation in which English language skills can be honed. The six-week period employed at their college where the present study was conducted is good; and perhaps an even longer period of study is desirable.

Recommendations

Based on the results of the present study, it seems clear that future research should be carried out on larger samples of foreign students from diverse home countries. The use of larger samples would allow more confident generalization of findings. In addition, the inclusion of students of various nationalities would allow for the emergence of more pronounced nationality differences in initial learning styles.

In addition, it is recommended that future studies employ learning style measures that are more focused on specific dimensions of learning preference. The use of an inventory with 28 different aspects of learning style results in the necessity of conducting large numbers of hypothesis tests in order to identify significant relationships, which in turn results in an accumulating probability of Type one statistical errors (false positives). In other words, we cannot be certain whether the results obtained in the present study are generalizable to Asian students in general, or simply the result of random variability in responses.

Of course, the clear awareness of cultural difference among the faculty members who participated in this study, as well as their active and positive responses to these differences, suggests the utility of continuing to teach future instructors about learning style differences and the relationship of such differences to specific nationalities and cultural groups. Obviously this is something that instructors will learn by experience as they are exposed to foreign students, but it is very important to provide instructors with theoretical models for students' learning style preferences that inform the instructors' efforts to make the educational experience of foreign students as enjoyable and productive as possible.

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East Stroudsburg, PA
18301-2999

East Stroudsburg University Institutional Review Board
Human Research Review
Protocol # **ESU-IRB-007a-0910**

Date: **September 20, 2009**
To: **Sussie Eshun and Arlene Young**
From: **Shala E. Davis, Ph.D., IRB Chair**
Proposal Title: **"A Comparative Study of First Time International Students' Level of Anxiety in Relationship to Awareness of Their Learning Style Perferences"**

Review Requested:	Exempted	Expedited	Full Review **X**
Review Approved:	Exempted	Expedited	Full Review **X**

FULL RESEARCH

__**X**__ Your full review research proposal has been approved by the University IRB (12 months). Please provide the University IRB a copy of your Final Report at the completion of your research. (Extension granted)

____ Your full review research proposal has been approved with recommendations by the University IRB. Please review recommendations provided by the reviewers and **submit necessary documentation for full approval.**

____ Your full review research proposal has not been approved by the University IRB. Please review recommendations provided by the reviewers and resubmit.

EXEMPTED RESEARCH

____ Your exempted review research proposal has been approved by the University IRB (12 months). Please provide the University IRB a copy of your Final Report at the completion of your research.

____ Your exempted review research proposal has been approved with recommendations by the University IRB. Please review recommendations provided by the reviewers and **submit necessary documentation for full approval.**

____ Your exempted review research proposal has not been approved by the University IRB. Please review recommendations provided by the reviewers and resubmit, if appropriate.

EXPEDITED RESEARCH

____ Your expedited review research proposal has been approved by the University IRB (12 months). Please provide the University IRB a copy of your Final Report at the completion of your research.

____ Your expedited review research proposal has been approved with recommendations by the University IRB. Please review recommendations provided by the reviewers and **submit necessary documentation for full approval.**

____ Your expedited review research proposal has not been approved by the University IRB. Please review recommendations provided by the reviewers and resubmit, if appropriate.

Please revise or submit the following:

Appendix B

CENTENARY COLLEGE CONSENT LETTER

March 12, 2009

Dr. Barbara Lewthwaite
Acting President of Centenary College
Hackettstown, NJ 07840

Dear Dr. Lewthwaite:

I am a doctoral candidate in the School of Graduate Studies and Research at Indiana University of Pennsylvania. My doctoral dissertation is *A Comparative Study of First Time International College Students' Level of Anxiety in Relationship to Awareness of Their Learning Style Preferences.*

Centenary College has been selected by the researcher to participate in this international study. I would like to identify first time international college students and assess their learning-style preferences. I would also like to identify and measure anxiety levels of the international component of this group.

Thank you for your permission to gather information from the Centenary College database with reference to Summer Culture and Language Program (SCLP) participants' Grade Point Averages and results from the Dunn and Dunn Learning Style Model, the Suinn-Lew *Self Identity Acculturation Scale,* and Spielberger's *Stait/Trait Anxiety Inventory.* I would also like permission to post-test a sample of the SCLP students who remain on campus for two more semesters. Participation in the study is voluntary, subjects will have the right to withdraw at any time without penalty, and they will be informed that there are no known risks to this study. Each student will be assigned an identification coded number, and all information will be kept confidential. In no way will students' name or their corresponding data be identified in this study without their permission.

Thank you very much for your consideration to this matter. If you have any questions regarding my research, please do not hesitate to contact me.

Yours truly,
Arlene S. Young
E-Mail: younga@centenarycollege.edu, Phone: (908) 852-1400 extension 2227

THIS PROJECT HAS BEEN APPROVED BY THE EAST STROUDSBURG UNIVERSITY OF PENNSYLVANIA INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS.

Appendix C

SUBJECT PARTICIPATION CONSENT AND RELEASE FORM

Proposal:

Investigator: Arlene S. Young
Subject: Anxiety and Learning Styles

I hereby consent to participate in a study of the effects of learning style preference and anxiety levels by Arlene S. Young as part of her doctoral research at Indiana University of Pennsylvania. The purpose of the study is to determine whether awareness of learning style preferences of international college students impact anxiety levels.

My involvement in the research will consist of taking the *State/Trait Anxiety Inventory* (STAI) (Spielberger, 1986) and *Building Excellence* (BE) (Rundle & Dunn, 1997) and the *Suinn-Lew Asian Self Identity Acculturation (SL-ASIA)* (Suinn, 1992).

My participation in this study is completely voluntary. I may withdraw from the study at any time.

I further understand that there are no direct benefits to me to be expected, and that there are no known risks involved in participation. Confidentiality of my response is ensured. I understand that the data collected will be stored in a secure location.

This study has been explained to me and I have had the opportunity to have my questions answered to my satisfaction by contacting the researcher, Arlene Young at (908) 852-1400, extension 2227, Dr. Shala E. Davis, Chair of East Stroudsburg University of Pennsylvania Institutional Review Board for the Protection of Human Subjects, at (570) 422-3336, or Dr. Sussie Eshun, Doctoral Dissertation Chair, at (570) 422-3736

_____ _____

Signature Date

THIS PROJECT HAS BEEN APPROVED BY THE EAST STOURDSBURG UNIVERSITY OF PENNSYLVANIA

INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS.

----------Tear Off----------

I wish to participate in a focus group discussion regarding this study.

_____ _____

Signature Date

Appendix D

State-Trait Anxiety Inventory (STAI)

SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

Please provide the following information:

Name_____ Date_____ S_____

Age_____ Gender (*Circle*) **M F** T_____

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

 STAIP-AD Test Form Y
Published by Mind Garden, Inc., Redwood City, CA.

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name_____ Date_____

DIRECTIONS

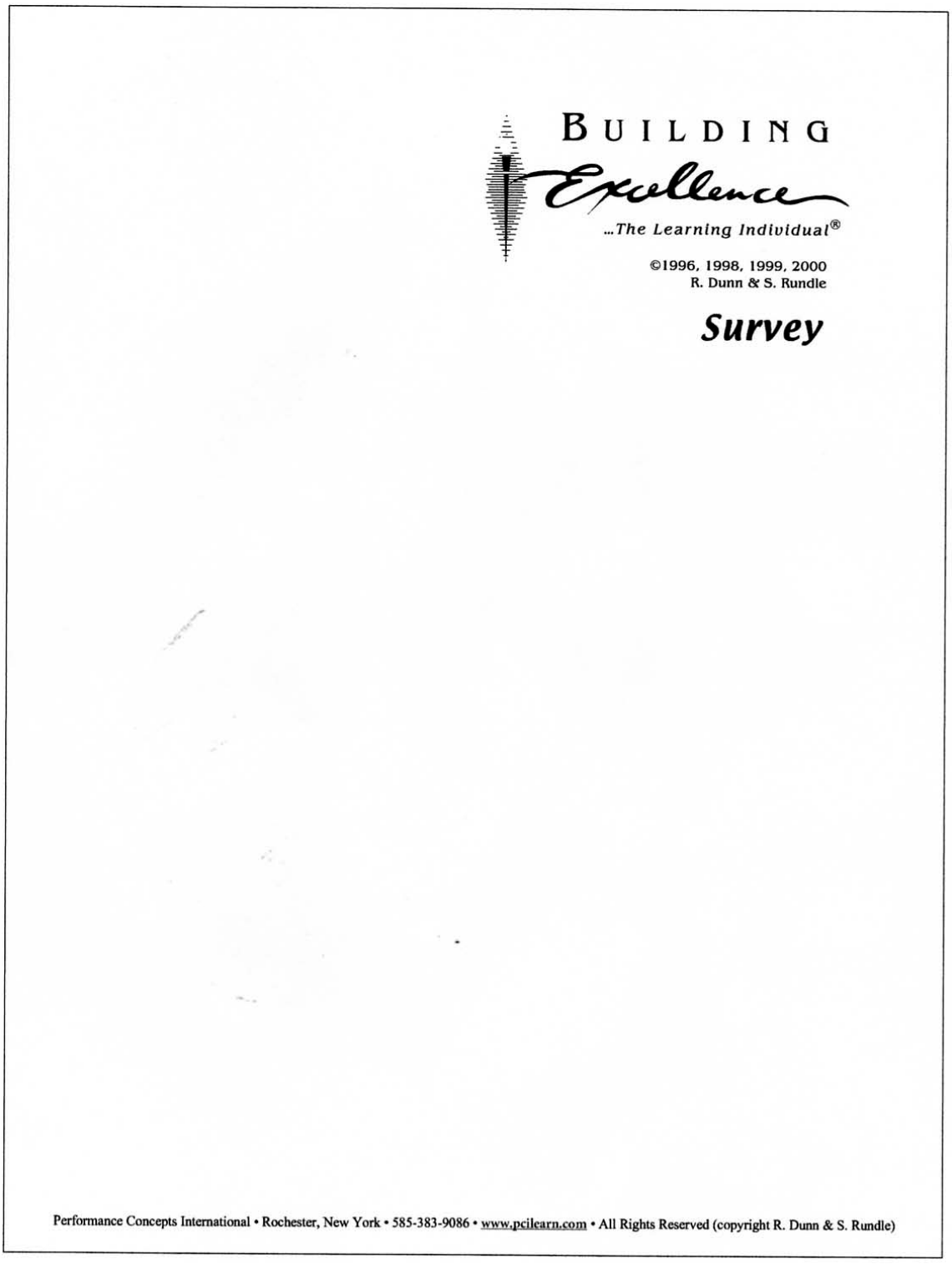
A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	1	2	3	4
22. I feel nervous and restless	1	2	3	4
23. I feel satisfied with myself	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure	1	2	3	4
34. I make decisions easily	1	2	3	4
35. I feel inadequate	1	2	3	4
36. I am content	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

STAIP-AD Test Form Y
Published by Mind Garden, Inc., Redwood City, CA.

Appendix E

Building Excellence: The Learning Individual (BE)



Please check one box in each of the following 6 categories.

1. Age

- ❒ 25 and under
- ❒ 26 – 35
- ❒ 36 – 45
- ❒ 46 – 55
- ❒ 56 and older

2. Sex

- ❒ Male
- ❒ Female

3. Zip Code or Country Code

- ❒ Zip Code: _____
- ❒ Country Code: _____

4. Position

- ❒ Executive Management
- ❒ Manager
- ❒ Front Line Supervisor
- ❒ Employee
- ❒ Professor/Teacher
- ❒ Other

5. Occupation

- ❒ Air Traffic Controller
- ❒ Customer Service Representative
- ❒ Career Counselor
- ❒ Educator/Teacher/Administrator
- ❒ Engineer/Scientist
- ❒ Finance
- ❒ Inside Sales (call center)
- ❒ Information Systems
- ❒ Manufacturing/Distribution
- ❒ Marketing
- ❒ Trainer/Facilitator
- ❒ Outbound Sales (call center)
- ❒ Outside Sales
- ❒ Other

6. Education

- ❒ Some High School
- ❒ High School Graduate
- ❒ Vocational Trade School
- ❒ 2 Year Associate Degree
- ❒ 4 Year BA/BS Degree
- ❒ Post Graduate Degree

Name: _____ Date: _____

Organization/Educational Institution: _____

To provide you with a point of focus as you respond to the survey, select one of the following situations

- ❒ You need to learn how to operate a new machine.
- ❒ You are learning a new software program.
- ❒ You are studying for an important exam.
- ❒ You are participating in an important meeting.
- ❒ You are working on a complex task or project.
- ❒ NOTE: If none of the identified situations seem right for you, create one of your own in the space provided below.

_____

_____

IMPORTANT INFORMATION

- ■ Take your time as you respond to each statement.
- ■ Avoid over analyzing the statements.
- ■ Avoid second-guessing yourself. The results of the survey are more accurate when you respond honestly.
- ■ As you read the statements in the survey, choose each of your responses based on the IDEAL situation/environment in which you will learn, concentrate, and be most productive.
- ■ As you respond to the survey, you will find similarities in some of the statements. This is intentional to ensure reliability of the Building Excellence Survey.

Perceptual Elements

SD = Strongly Disagree
D = Disagree
U = Uncertain
A = Agree
SA = Strongly Agree

Most of the time I remember best...

Circle Your Response Below

1. ...when I listen to someone speaking.	SD	D	U	A	SA
2. ...when I picture what the person is talking about.	SD	D	U	A	SA
3. ...when I take notes while I read.	SD	D	U	A	SA
4. ...when I can make personal connections to what I am learning.	SD	D	U	A	SA
5. ...when I get involved in doing something.	SD	D	U	A	SA
6. ...when I listen to a lecture.	SD	D	U	A	SA
7. ...when I picture what the speaker is saying.	SD	D	U	A	SA
8. ...when I underline key words.	SD	D	U	A	SA
9. ... when I can discuss the information I am learning.	SD	D	U	A	SA
10. ...when I focus my energy through active involvement.	SD	D	U	A	SA
11. ...when I hear someone talk.	SD	D	U	A	SA
12. ...when I create mental pictures of what I hear.	SD	D	U	A	SA
13. ...when I see words on a computer.	SD	D	U	A	SA
14. ... when the material I am learning is personally meaningful.	SD	D	U	A	SA
15. ...when I am actively participating.	SD	D	U	A	SA
16. ...when I listen to a presenter speak.	SD	D	U	A	SA
17. ...when I create mental pictures of what is being said.	SD	D	U	A	SA
18. ...when I take notes while I listen.	SD	D	U	A	SA
19. ...when I can use my past experiences to understand what I am learning.	SD	D	U	A	SA
20. ...when I have hands-on involvement.	SD	D	U	A	SA
21. ...when I hear a presentation.	SD	D	U	A	SA
22. ...when I have a clear picture in my head.	SD	D	U	A	SA
23. ...when I read.	SD	D	U	A	SA
24. ...when I can engage in a conversation about the material I am learning.	SD	D	U	A	SA
25. ...when I am physically involved in my work.	SD	D	U	A	SA

Psychological Elements

SD = Strongly Disagree
D = Disagree
U = Uncertain
A = Agree
SA = Strongly Agree

If I have a choice, most of the time...

Circle Your Response Below

1. ...a logical approach works best for me.	SD	D	U	A	SA
2. ...I make decisions and solve problems quickly.	SD	D	U	A	SA
3. ...I work on several parts of a project at once.	SD	D	U	A	SA
4. ...I take time to reflect before I make decisions.	SD	D	U	A	SA
5. ...I like information that leads to a logical conclusion.	SD	D	U	A	SA
6. ...I am quick to take action.	SD	D	U	A	SA
7. ...I prefer less detail when I start something new.	SD	D	U	A	SA
8. ...I like to think about a decision before acting.	SD	D	U	A	SA
9. ...I prefer information that is presented point-by-point.	SD	D	U	A	SA
10. ...I make decisions quickly.	SD	D	U	A	SA
11. ...I finish one thing before starting another.	SD	D	U	A	SA
12. ...I make decisions quickly and move on.	SD	D	U	A	SA
13. ...I like a lot of detail before I begin a task.	SD	D	U	A	SA
14. ...I respond quickly when I am asked a question.	SD	D	U	A	SA
15. ...I like to work on projects without too much planning.	SD	D	U	A	SA
16. ...I like to think about my options before I make a decision.	SD	D	U	A	SA
17. ...I like information presented in an orderly way.	SD	D	U	A	SA

Environmental Elements

SD = Strongly Disagree
D = Disagree
U = Uncertain
A = Agree
SA = Strongly Agree

If I have a choice, I will...

Circle Your Response Below

1. ... choose a quiet room in which to work.	SD	D	U	A	SA
2. ... turn off most of the lights.	SD	D	U	A	SA
3. ...put on layers of clothes until I am warm (not hot).	SD	D	U	A	SA
4. ...work sitting on soft comfortable furniture.	SD	D	U	A	SA
5. ...turn on background music.	SD	D	U	A	SA
6. ...turn on most of the lights.	SD	D	U	A	SA
7. ...work in a room where it is warmer.	SD	D	U	A	SA
8. ...sit on a soft chair.	SD	D	U	A	SA
9. ...work with the radio or television on.	SD	D	U	A	SA
10. ...work in a dimly lit room.	SD	D	U	A	SA
11. ...lower the heat until I am cool (not cold).	SD	D	U	A	SA
12. ...work sitting on a soft comfortable chair.	SD	D	U	A	SA
13. ...choose a place where it is very quiet.	SD	D	U	A	SA
14. ...work in a brightly lit room.	SD	D	U	A	SA
15. ...work in a room that is cool.	SD	D	U	A	SA
16. ...think while sitting on soft comfortable furniture.	SD	D	U	A	SA

Physiological Elements

SD = Strongly Disagree
D = Disagree
U = Uncertain
A = Agree
SA = Strongly Agree

Most of the time ...

Circle Your Response Below

1. ...I stay focused longer if I eat while I concentrate.	SD	D	U	A	SA
2. ...I concentrate better first thing in the morning.	SD	D	U	A	SA
3. ...I accomplish more between 10:00 a.m. and 2:00 p.m.	SD	D	U	A	SA
4. ...late afternoon is my most productive time of day.	SD	D	U	A	SA
5. ...I am a night owl and do some of my best work in the evening.	SD	D	U	A	SA
6. ...I can concentrate better if I sit in one place.	SD	D	U	A	SA
7. ...my concentration improves if I snack on something.	SD	D	U	A	SA
8. ...I like to get my work done first thing in the morning.	SD	D	U	A	SA
9. ...my energy level peaks between 10:00 a.m. and 2:00 p.m.	SD	D	U	A	SA
10. ...I can accomplish more in late afternoon meetings.	SD	D	U	A	SA
11. ...I get more accomplished when I work in the evening.	SD	D	U	A	SA
12. ...I need to get up and move around while I am working.	SD	D	U	A	SA
13. ...snacking helps me stay focused.	SD	D	U	A	SA
14. ...between 8:00 a.m. and 10:00 a.m. is my best time of day.	SD	D	U	A	SA
15. ...late morning/early afternoon meetings work best for me.	SD	D	U	A	SA
16. ...I am most energized in the late afternoon.	SD	D	U	A	SA
17. ...I can accomplish more if I focus my attention after dinner.	SD	D	U	A	SA
18. ...I concentrate better if I can move around while I am working.	SD	D	U	A	SA
19. ...I concentrate better if I am eating something.	SD	D	U	A	SA
20. ...I get more accomplished early in the morning.	SD	D	U	A	SA
21. ...I accomplish a lot in the late morning/early afternoon.	SD	D	U	A	SA
22. ...I am more productive in the late afternoon.	SD	D	U	A	SA
23. ...I concentrate best after dinner.	SD	D	U	A	SA
24. ...I can sit in one place for a long time while I am working.	SD	D	U	A	SA

Emotional Elements

SD = Strongly Disagree
D = Disagree
U = Uncertain
A = Agree
SA = Strongly Agree

Most of the time I am more productive if I ...

Circle Your Response Below

1. ...work on a challenging project.	SD	D	U	A	SA
2. ...work on several tasks at the same time.	SD	D	U	A	SA
3. ...can do things the way I want to do them.	SD	D	U	A	SA
4. ...follow an outline.	SD	D	U	A	SA
5. ...am challenged.	SD	D	U	A	SA
6. ...focus all of my energy and attention on one project.	SD	D	U	A	SA
7. ...do things my way.	SD	D	U	A	SA
8. ...follow directions.	SD	D	U	A	SA
9. ...am always learning new things.	SD	D	U	A	SA
10. ...complete one task before starting another one.	SD	D	U	A	SA
11. ...can do things the way I prefer to do them.	SD	D	U	A	SA
12. ...follow procedures.	SD	D	U	A	SA
13. ...am challenged to learn new things.	SD	D	U	A	SA
14. ...focus my attention on several projects.	SD	D	U	A	SA
15. ...do things the way I think they should be done.	SD	D	U	A	SA
16. ...follow a structured format.	SD	D	U	A	SA

Sociological Elements

SD = Strongly Disagree
D = Disagree
U = Uncertain
A = Agree
SA = Strongly Agree

Most of the time I complete projects more effectively when I...	*Circle Your Response Below*				
1. ...discuss project options with one other person.	SD	D	U	A	SA
2. ...collaborate with a small group (3 people).	SD	D	U	A	SA
3. ...participate as a large team and get everyone's input.	SD	D	U	A	SA
4. ...work independently.	SD	D	U	A	SA
5. ...work with familiar routines.	SD	D	U	A	SA
6. ...discuss ideas with one other person.	SD	D	U	A	SA
7. ...participate in a small group.	SD	D	U	A	SA
8. ...discuss the project with team members.	SD	D	U	A	SA
9. ...work on my own and then collaborate with my superior.	SD	D	U	A	SA
10. ...use the same methods most of the time.	SD	D	U	A	SA
11. ...exchange ideas with one other person.	SD	D	U	A	SA
12. ...generate ideas in a small group.	SD	D	U	A	SA
13. ...interact with team members to develop new ideas.	SD	D	U	A	SA
14. ...work alone and then work with a co-worker.	SD	D	U	A	SA
15. ...stick to the same routines and patterns that I know work.	SD	D	U	A	SA
16. ...generate ideas by interacting with one other person.	SD	D	U	A	SA
17. ...work in a small group.	SD	D	U	A	SA
18. ...brainstorm with the team.	SD	D	U	A	SA
19. ...work on my own without interference from my superior.	SD	D	U	A	SA
20. ...do things the same way.	SD	D	U	A	SA

Appendix F

SUINN-LEW ASIAN SELF-IDENTITY ACCULTURATION SCALE (SL-ASIA)

INSTRUCTIONS: The questions which follow are for the purpose of collecting information about your historical background as well as more recent behaviors which may be related to your cultural identity.

Choose the one answer which best describes you.

1. What language can you speak?

    1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
    2. Mostly Asian, some English
    3. Asian and English about equally well (bilingual)
    4. Mostly English, some Asian
    5. Only English

2. What language do you prefer?
    1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
    2. Mostly Asian, some English
    3. Asian and English about equally well (bilingual)
    4. Mostly English, some Asian
    5. Only English

3. How do you identify yourself?
    1. Oriental
    2. Asian
    3. Asian-American
    4. Chinese-American, Japanese-American, Korean-American, etc.
    5. American

4. Which identification does (did) your mother use?
    1. Oriental
    2. Asian
    3. Asian-American
    4. Chinese-American, Japanese-American, Korean-American, etc.
    5. American

5. Which identification does (did) your father use?
    1. Oriental
    2. Asian
    3. Asian-American
    4. Chinese-American, Japanese-American, Korean-American, etc.
    5. American

6. What was the ethnic origin of the friends and peers you had, as a child up to age 6?
    1. Almost exclusively Asians, Asian-Americans, Orientals
    2. Mostly Asians, Asian-Americans, Orientals
    3. About equally Asian groups and Anglo groups
    4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
    5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups

7. What was the ethnic origin of the friends and peers you had, as a child from 6 to 18?

1. Almost exclusively Asians, Asian-Americans, Orientals
2. Mostly Asians, Asian-Americans, Orientals
3. About equally Asian groups and Anglo groups
4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups

8. Whom do you now associate with in the community?

1. Almost exclusively Asians, Asian-Americans, Orientals
2. Mostly Asians, Asian-Americans, Orientals
3. About equally Asian groups and Anglo groups
4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups

9. If you could pick, whom would you prefer to associate with in the community?

1. Almost exclusively Asians, Asian-Americans, Orientals
2. Mostly Asians, Asian-Americans, Orientals
3. About equally Asian groups and Anglo groups
4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups

10. What is your music preference?

1. Only Asian music (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian
3. Equally Asian and English
4. Mostly English
5. English only

11. What is your movie preference?

1. Asian-language movies only
2. Asian-language movies mostly
3. Equally Asian/English English-language movies
4. Mostly English-language movies only
5. English-language movies only

12. What generation are you? (circle the generation that best applies to you:)

1 1st Generation = I was born in Asia or country other than U.S.
2 2nd Generation = I was born in U.S., either parent was born in Asia or country other than U.S.
3 3rd Generation = I was born in U.S., both parents were born in U.S, and all grandparents born in Asia or country other than U.S.
4 4th Generation = I was born in U.S., both parents were born in U.S, and at least one grandparent born in Asia or country other than U.S. and one grandparent born in U.S.
5 5th Generation = I was born in U.S., both parents were born in U.S., and all grandparents also born in U.S.
6 Don't know what generation best fits since I lack some information.

13. Where were you raised?

1. In Asia only
2. Mostly in Asia, some in U.S.
3. Equally in Asia and U.S.
4. Mostly in U.S., some in Asia

5. In U.S. only

14. What contact have you had with Asia?
    1. Raised one year or more in Asia
    2. Lived for less than one year in Asia
    3. Occasional visits to Asia
    4. Occasional communications (letters, phone calls, etc.) with people in Asia
    5. No exposure or communications with people in Asia

15. What is your food preference at home?
    1. Exclusively Asian food
    2. Mostly Asian food, some American
    3. About equally Asian and American
    4. Mostly American food
    5. Exclusively American food

16. What is your food preference in restaurants?
    1. Exclusively Asian food
    2. Mostly Asian food, some American
    3. About equally Asian and American
    4. Mostly American food
    5. Exclusively American food

17. Do you
    1. Read only an Asian language?
    2. Read an Asian language better than English?
    3. Read both Asian and English equally well?
    4. Read English better than an Asian language?
    5. Read only English?

18. Do you
    1. Write only an Asian language?
    2. Write an Asian language better than English?
    3. Write both Asian and English equally well?
    4. Write English better than an Asian language?
    5. Write only English?

19. If you consider yourself a member of the Asian group (Oriental, Asian, Asian-American, Chinese-American, etc., whatever term you prefer), how much pride do you have in this group?
    1. Extremely proud
    2. Moderately proud
    3. Little pride
    4. No pride but do not feel negative toward group
    5. No pride but do feel negative toward group

20. How would you rate yourself?
    1. Very Asian
    2. Mostly Asian
    3. Bicultural
    4. Mostly Westernized
    5. Very Westernized

21. Do you participate in Asian occasions, holidays, traditions, etc.?
    1. Nearly all
    2. Most of them

3. Some of them
4. A few of them
5. None at all

Appendix G

Student Focus Group Questions

1. When you came here, what was your reaction to your first American class? How did you feel about the style and methods of presentation?

2. How is the classroom learning different between your [Chinese, Japanese, or Korean] and American classes? What have you done to adapt to this?

3. How do you react if you hear students call professors by their first names, or openly criticize, argue, and interrupt one another?

4. What do you do if a teacher asks you for your opinion or analysis of a particular problem? What about expressing viewpoints during classroom discussions. If there is an essay or paper, do you concentrate on the facts and information or on your own idea and opinions? Why? What difficulties have your encountered in writing a research paper?

5. Americans typically value independence of thought, competition, and "do it yourself" attitudes. Contrast this with the [Chinese, Japanese, or Korean] emphasis on relationships with others, politeness, cooperation, harmony, respect, and "saving face". What advice would you give to teachers and fellow students?

6. What do you think about the texts and examinations? What kind of test do you prefer (essay, multiple choice, oral exam)? Why? What place does memorization play in your own way of learning? How do you study for an examination (i.e., group learning, individual preparation, memorization of textbooks, handouts, and lecture notes)? Do you like handouts? Should the professor use overheads and electronic presentations?

7. If someone gave you a really bad grade but you felt you should have a better grade, what would you do?

8. When you encounter difficult subjects with a lot of specialized vocabulary or new concepts (i.e., philosophy, science, economics, finance, technology) how do you prepare for these?

9. What advice would you give me to help me teach [Chinese, Japanese, or Korean] students better? How can I help them learn? If you could, what would you change about the way American teaching and learning is done? (Tucker, 2003).

Appendix H

Teacher Focus Group Questions

1. What do you know about international student learning and learning styles?

2. Do you adapt your teaching methodologies to international student needs? How do your techniques differ from when you are teaching American students/

3. What do you do when international students are reluctant to participate in classroom discussion? Do you address particular questions to them if they do not participate?

4. What type of assessment do you use in an international classroom? If the classroom is culturally diverse, do you offer additional time for international students? How do you accomplish this without affecting American students?

5. Do you offer additional worksheets, handouts, or class notes for international students? Do you permit the use of tape recorders in the classroom? Do your American students object to preferential treatment of international students? How do you handle this?

6. What changes would you make in your lesson plans or teaching methods in order to better accommodate international students?