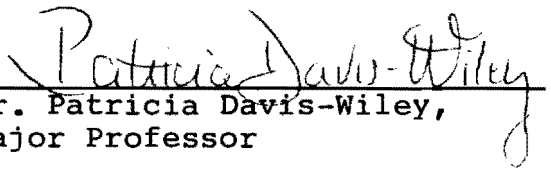
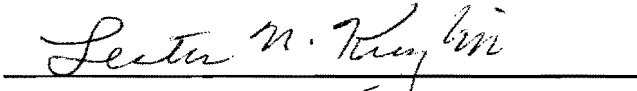


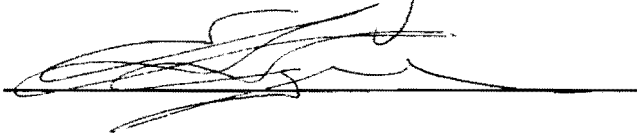
To the Graduate Council:

I am submitting herewith a dissertation written by Torpong Jantawee Goodson entitled "Learning Style Preferences of East Asian ESL Students." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor in Philosophy, with a major in Education.


Dr. Patricia Davis-Wiley,
Major Professor

We have read this dissertation
and recommend its acceptance:









Accepted for the Council:


Associate Vice Chancellor
and Dean of the Graduate School

**LEARNING STYLE PREFERENCES
OF
EAST ASIAN ESL STUDENTS**

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Torpong Jantawee Goodson

August, 1993

Copyright 1993 by Torpong Jantawee Goodson
All rights reserved

DEDICATION

This dissertation is dedicated to my parents,

Mr. Wiwet Jantawee
Mrs. Saowakon Jantawee

and my adoptive father,

Dr. Roger Allen Goodson

who have given me love
and
invaluable educational opportunities.

ACKNOWLEDGMENTS

I would like to express my appreciation and thanks to my chairperson, Dr. Patricia Davis-Wiley, for her guidance, encouragement and patience. I would also like to thank the other committee members, Dr. Lester N. Knight, Dr. C. Glennon Rowell, Dr. Dolly J. Young and Dr. E. Grady Bogue, for their comments and assistance over the past three years; Dr. Donald J. Dessert for his advice and assistance in the statistical process; Dr. Joy M. Reid of the University of Wyoming whose study inspired me to choose the subject of my dissertation and who gave me her permission, encouragement and advice to use her questionnaire as an instrument in my research; SFC. James W. Gibson, Mr. James Smithhart and Mr. L. Jack Wilson for their assistance in the computer process; my graduate student friends, Ms. Jienying Sun, Mrs. Kazumi Nimura and Mrs. Enjou Kim, for their translation of my questionnaire into their native languages. Finally, I would like to express my thanks to Mr. Thomas F. Anderson for his support and encouragement throughout my years of study.

ABSTRACT

Understanding learning-style needs of foreign students can help teachers avoid focusing on just their own learning styles and systematically add variety to their teaching patterns. Knowing the ways all students learn, indeed, is very important to good teaching. The main purpose of this research study was to investigate the learning style preferences of East Asian (Chinese, Japanese, Korean, and Taiwanese) ESL students at The University of Tennessee, Knoxville. Specifically, the investigator attempted to:

- (1) identify ethnographic variables that affect the differences in learning styles of these ESL students; and
- (2) identify self-perceived changes in learning styles of these ESL students since they came to the United States.

The instrument used in this study was a self-reporting questionnaire developed from Professor Reid's "Perceptual Learning Style Preference Questionnaire" (1984). The questionnaire consisted of three major parts: a formal ethnographic questionnaire; Professor Reid's 30 perceptual learning style preference statements; and an open-ended, self-report of changes in learning styles since coming to the United States. The survey was sent to 314 students. Two hundred and twenty-seven (72.29%) students completed and returned the questionnaires. The individual student

variables and the responses from the questionnaire were descriptively analyzed. Learning style preference means for each set of variables were classified into three ranges: first, second, and last learning style preferences. The first preference was defined as the highest mean score among the six preferences. The second preference was defined as the second highest mean score among the six preferences. The last preference was defined as the lowest mean score among the six preferences. Standard error of the mean was provided in each of the tables along with the mean to determine if the means were statistically different.

The findings of the study were: (1) group learning was ranked very negatively; (2) Chinese, Korean, and Taiwanese students preferred visual, auditory, kinesthetic, tactile, and individual learning styles as their first preferences; (3) Japanese students gave their most highly positive ratings to kinesthetic and tactile learning styles as their first preferences; this indicates that Japanese students, as a group, do differ in their learning style preferences only on one learning style, visual, when compared to groups of Chinese, Korean, and Taiwanese students; (4) age, class standing, field of study, and TOEFL scores do appear to slightly affect students' choices of learning styles; and (5) more than one-third of the

respondents indicated that they had made changes in their learning styles/strategies since coming to the United States.

Conclusions reached from the findings include the need to integrate: (1) a learning style inventory in an ESL classroom and/or during the orientation sessions offered by the department of counseling at the beginning of each semester; (2) teaching/learning style/strategy issues and characteristics into courses of the college of education; and (3) a variety of instructional design for a class to respond to the learners' needs according to students' different learning styles.

TABLE OF CONTENTS

CHAPTER	PAGE
I. OVERVIEW OF THE STUDY	1
Introduction	1
Statement of the Problem	10
Purpose of the Study	11
Research Questions	11
Hypotheses	12
Significance of the Study	12
Assumptions	13
Limitation of the Study	14
Definition of Terms	14
Methodology	16
Organization of the Study	18
II. REVIEW OF THE LITERATURE	19
Introduction	19
Learning Styles	20
Learning Styles and Different Cultural Backgrounds	22
Learning Styles and Second-Language Learning	26
Learning Styles and Teaching Styles	30
Learning Styles and Counseling	34
Summary	36

III. METHODS AND PROCEDURES	38
Introduction	38
Population	39
Subjects	39
Instrumentation	40
Procedures	43
VI. PRESENTATION AND ANALYSIS OF THE DATA	48
Introduction	48
Profile of the Respondents	49
Learning Style Preferences of Individual Respondents	55
Learning Style Preference Means	58
Learning Style Preference Means by Multiple Variables	70
Self-Perceived Changes of Learning Styles	98
Discussion	104
Conclusion	116
V. SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS .	119
Summary	119
Implications	122
Recommendations	126
LIST OF REFERENCES	129
APPENDICES	139

APPENDIX A: Perceptual Learning Style	
Preference Questionnaire	140
Chinese	141
Japanese	147
Korean	153
APPENDIX B: Professor Joy M. Reid's	
Perceptual Learning Style	
Preference Questionnaire (1984) ..	159
APPENDIX C: Professor Joy M. Reid's	
Letter of Permission	163
APPENDIX D: Cover Letter	165
Chinese	166
Japanese	167
Korean	168
APPENDIX E: Reminding Cover Letter	169
APPENDIX F: Professor Joy M. Reid's	
Scoring Form	171
APPENDIX G: Scoring Form	173
VITA	175

LIST OF TABLES AND FIGURE

TABLE		PAGE
1.	East Asian Students Enrolled in Institutions of Higher Education in the United States: 1980-1981 to 1989-1990	9
2.	Questionnaire Return Rate	45
3.	The Number of Questionnaires Returned by Gender and Country of Origin	50
4.	The Number and Percentage of Questionnaires Returned by Country of Origin	50
5.	The Number and Percentage of Questionnaires Returned by Age	51
6.	The Number and Percentage of Questionnaires Returned by Class	51
7.	The Number and Percentage of Questionnaires Returned by Major Field	52
8.	The Number and Percentage of Questionnaires Returned by TOEFL Score	53
9.	The Number and Percentage of Questionnaires Returned by Length of Time Studying English in Native Country	53

10.	The Number and Percentage of Questionnaires Returned by Length of Time Living in the United States and Length of Time Studying in the United States	54
11.1	Learning Style Preferences of Individual Respondents by Country of Origin	56
11.2	Learning Style Preferences of Individual Responses	57
12.	Learning Style Preference Means by Gender	59
13.	Learning Style Preference Means by Age	60
14.	Learning Style Preference Means by Country of Origin	61
15.	Learning Style Preference Means by Language ..	62
16.	Learning Style Preference Means by Class	63
17.	Learning Style Preference Means by Major Field	65
18.	Learning Style Preference Means by TOEFL Score	66
19.	Learning Style Preference Means by Length of Time Studying English in Native Country	67
20.	Learning Style Preference Means by Length of Time Living in the United States	68
21.	Learning Style Preference Means by Length of Time Studying in the United States	69

22.	Learning Style Preference Means by Country	
	of Origin and Gender	71
23.1	Learning Style Preference Means by Country	
	of Origin and Age: China	72
23.2	Learning Style Preference Means by Country	
	of Origin and Age: Japan	73
23.3	Learning Style Preference Means by Country	
	of Origin and Age: Korea	74
23.4	Learning Style Preference Means by Country	
	of Origin and Age: Taiwan	75
24.	Learning Style Preference Means by Country	
	of Origin and Class	76
25.1	Learning Style Preference Means by Country	
	of Origin and Major Field: China	77
25.2	Learning Style Preference Means by Country	
	of Origin and Major Field: Japan	79
25.3	Learning Style Preference Means by Country	
	of Origin and Major Field: Korea	80
25.4	Learning Style Preference Means by Country	
	of Origin and Major Field: Taiwan	82
26.1	Learning Style Preference Means by Country	
	of Origin and TOEFL Score: China	83
26.2	Learning Style Preference Means by Country	
	of Origin and TOEFL Score: Japan	84

26.3	Learning Style Preference Means by Country	
	of Origin and TOEFL Score: Korea	85
26.4	Learning Style Preference Means by Country	
	of Origin and TOEFL Score: Taiwan	86
27.1	Learning Style Preference Means by Country	
	of Origin and Length of Time Studying	
	English in Native Country: China	87
27.2	Learning Style Preference Means by Country	
	of Origin and Length of Time Studying	
	English in Native Country: Japan	88
27.3	Learning Style Preference Means by Country	
	of Origin and Length of Time Studying	
	English in Native Country: Korea	89
27.4	Learning Style Preference Means by Country	
	of Origin and length of Time Studying	
	English in Native Country: Taiwan	89
28.1	Learning Style Preference Means by Country	
	of Origin and Length of Time Living in	
	the United States: China	90
28.2	Learning Style Preference Means by Country	
	of Origin and Length of Time Living in	
	the United States: Japan	91
28.3	Learning Style Preference Means by Country	
	of Origin and Length of Time Living in	
	the United States: Korea	92

28.4	Learning Style Preference Means by Country of Origin and Length of Time Living in the United States: Taiwan	93
29.1	Learning Style Preference Means by Country of Origin and Length of Time Studying in the United States: China	94
29.2	Learning Style Preference Means by Country of Origin and Length of Time Studying in the United States: Japan	95
29.3	Learning Style Preference Means by Country of Origin and Length of Time Studying in the United States: Korea	96
29.4	Learning Style Preference Means by Country of Origin and Length of Time Studying in the United States: Taiwan	97
30.	Self-Perceived Changes in Respondents' Learning/Study Preference by Country of Origin and Gender	98
31.	Report of Self-Perceived Changes in Learning Styles: China	99
32.	Report of Self-Perceived Changes in Learning Styles: Japan	100
33.	Report of Self-Perceived Changes in Learning Styles: Korea	101
34.	Report of Self-Perceived Changes in Learning Styles: Taiwan	102

35.	Report of Self-Perceived Changes in	
	Learning Styles: Overall	103

FIGURE

1.	Countries of Origin of Foreign Students	
	in American Colleges and Universities	8

CHAPTER I

OVERVIEW OF THE STUDY

I. INTRODUCTION

Research suggests that people do not learn in precisely the same ways (Anderson, 1988; Anderson and Adams, 1992; Corbett and Smith, 1984; Dunn, Shea, Evans, and MacMurren, 1991; Ewing and Yong, 1992; Griggs, 1985; Kirby, Moore, and Schofield, 1988; Saville-Troike, 1976). Each person has a particular approach to learning with which he or she feels most comfortable.

Students struggle when they try to learn in ways that are not natural or easy for them. When teachers plan a variety of ways for students to learn, more students can use individual strengths to be successful. There is never one "right" way to teach (Guilds, 1989), or to learn.

Individualized instruction and learning-style analysis have become major concerns in most sectors of education over the past 15 years in response to problems of differential approaches to learning. Many individualized curricula, based upon some notion of students' aptitudes or specialized interests, have come to employ learning-activity packets, programmed materials, and computer-

assisted instruction. These, in turn, have fostered courses based upon variable content or rate of learning. But the relationship between individualized instruction and student achievement is much more complicated than simply attending to the specialized interests of the fast or slow learner (Corbett and Smith, 1984).

Since the late 1960s, educators have been studying whether individual differences can result in differences in concept formation, problem-solving techniques, and shared meanings. Although researchers identify and describe different learning styles with different attributes, they agree that a variety of patterns appear in a typical classroom (Guild, 1989). Students learn more readily when they process information in their own natural, preferred ways, and they vary in how much they rely on visual, auditory, and kinesthetic (or tactile) perception as they learn (Esfahani, 1989).

Teachers, who have their own preferred learning and teaching styles, can assume that their students use a variety of learning patterns. Teachers, however, frequently teach with the same methods in which they learn most effectively. This can result in conflicts between student styles and teacher styles (Oxford, Lavine, and Crookall, 1989).

Esfahani (1989) states:

How does a "kinesthetic student" learn from a "visual teacher?" How can an instructor with an auditory style communicate to visually-oriented students (p.16)?

Conflicts between teaching and learning styles tend to be problematic, and a great deal of learning can be lost because of these conflicts.

Students appear to learn best when the teaching methods used fit their preferred learning styles. When the teaching methods and the learning style preference are not the same, students can experience feelings of insecurity, frustration, anger, anxiety, alienation, and futility (Kreuze and Payne, 1989). Instructors should recognize that students do learn differently, and what may be the optimal teaching method for some students, may discourage others.

Teaching style consists of a teacher's personal behaviors and the media, methods, and materials used to transmit data to or receive it from the learner. Instruction must challenge the learner's complex and delicate mind-qualities and his/her ability and willingness to adapt. However, incompatibility in teaching-learning patterns can lead to frustration, anger, avoidance behaviors, and procrastination. Chronic periods of acute mismatch can result in major mental, emotional, and physical problems if the conflicts in styles are not recognized and dealt with appropriately (Gregorc, 1979).

The concept of learning styles has gained wide acceptance in a number of educational environments. Learning styles have been used as a focus for counseling college students (Price and Griggs, 1985) and for assisting students in higher education to realize their full learning potential (Claxton and Murrell, 1987; Cole, 1982). Because research shows that individuals are inclined to enter academic and vocational fields that are consistent with their learning styles (Biberman and Buchanan, 1986; Canfield, 1988; Kolb, 1976; Myers and McCaulley, 1985; Torbitt, 1981), another use for learning-style information is career guidance.

In some institutions, administrators use learning- and teaching-style information to transfer students to other sections when a problem arises regarding a conflict of styles in a particular class (Claxton, Adams, and Williams, 1982). Also, Claxton and Murrell (1987) reported that administrators used learning-style data to successfully change teaching strategies of faculty in departments that had high dropout rates.

Dunn (1988) found in her research that students with highly preferred learning styles achieve higher test scores when instructional conditions or resources complement their preferred styles. By teaching to the particular learning styles of students, learning outcomes have been found to

improve. Knowledge of learning styles of students helps instructors to understand the learning difficulties some students have in specific aspects of courses and to reduce their frustration levels. Instructors can then select appropriate teaching methods and instructional designs to improve their classroom efforts (Kreuze and Payne, 1989).

Research by Witkin (1976) has shown differences in the global and abstract functioning in different cultures; that is, different modes of thinking are characteristic of different cultures. If learners outside the mainstream of American culture exhibit unique learning-style characteristics, then foreign students, who come to the United States and learn/use English as a second language (ESL students), may use much of their time and effort trying to adjust to their new American learning situations. Therefore, identifying the learning-style preferences of non-native speakers of English may have wide-ranging implications in the areas of curriculum design, materials development, student orientation, and teacher training.

ESL college students, with their variety of language and cultural backgrounds and their differences in age and previous education, often come together in intensive English language programs in which they are taught homogeneously by teachers who have little knowledge of learning styles.

ESL instructors often use methods and materials that have been developed with the learning needs of native speakers of English in mind.

As Reid (1987) states:

In many cases, neither students nor teachers are aware that difficulty in learning class material, high frustration levels, and even failure may not rest solely in the material itself (p.91).

Research, therefore, should be conducted on the perceptual learning style preferences of non-native speakers of English in order to provide insights for the ESL classroom.

It has been estimated that by the year 2000, one in every three Americans will be an ethnic minority (Forrell, 1988). In the past 10 years, articles have appeared giving suggestions for meeting the educational needs of high-risk students (de Tornyay and Russell, 1978; Reed and Hudepohl, 1983). Loustau (1986) stated some overall suggestions for teachers who are presented with the challenge of teaching students who use English as a second language (ESL).

From 1976 to 1986, the number of foreign students enrolled in American colleges and universities increased 57.1%. The total number of foreign students in 1986 was 344,000 (Evangelauf, 1988), representing about 10% of the total college students in the United States (Moravcsik,

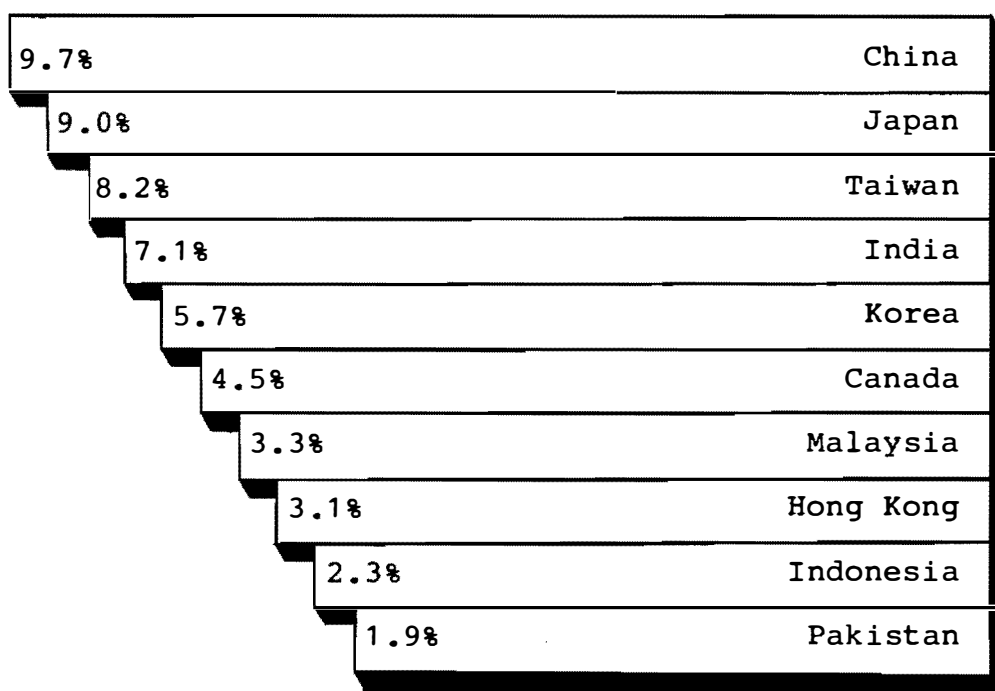
1985). In 1986, foreign students represented between 11% and 25% of the total graduate and undergraduate enrollment at the 15 institutions where their numbers were largest (Carnegie Foundation, 1987)

In 1989-1990 there were 387,000 foreign students studying at U.S. colleges and universities. This was 20,000 more than the year before, or a 5.6% increase, the largest since 1981-1982, when the foreign students population rose 6%. Approximately 54% of the students were from Asian countries in 1989-1990. Nearly thirty three percent (32.9%) of all foreign students were from East Asia -- China, Hong Kong, Japan, Korea, and Taiwan (NCES, 1991).

In 1991, 3,500 American institutions of higher education were flooded with 407,530 students from 193 different countries. Asia led the way with 39,600 students from China and 36,610 from Japan. In 1990, China, Japan, Taiwan, India, and Korea were the top five countries of origin for international students enrolling at United States institutions (Figure 1).

FIGURE 1

COUNTRIES OF ORIGIN OF FOREIGN STUDENTS
IN AMERICAN COLLEGES AND UNIVERSITIES



TOP TEN COUNTRIES OF ORIGIN
(% OF 1990 TOTAL)

Source: Smolowe, J. (1992). The pursuit of excellence.
Time, 139(15), p.60.

From the Digest of Education Statistics (1991) published by the National Center for Education Statistics, Table 1 shows data of foreign-student enrollment in American higher educational institutions. These figures indicate that in the decade between 1980 and 1990, the total number of East Asian students enrolling in these institutions increased 147%. Most notably, the number of Chinese students increased by 1105%, followed by Korean students with an increase of 253%, the Japanese with 121%, and the Taiwanese with 59%.

TABLE 1

EAST ASIAN STUDENTS ENROLLED IN INSTITUTIONS
OF HIGHER EDUCATION IN THE UNITED STATES:
1980-81 TO 1989-90

Country	1980-81	1985-86	1989-90
	Number	Number	Number
<u>East Asia</u>	51,650	80,720	127,320
China	2,700	13,980	33,390
Hong Kong	9,660	10,710	11,230
Japan	13,500	13,360	29,840
Korea	6,150	18,660	21,710
Taiwan	19,460	23,770	30,960

Source: National Center for Education Statistics.
Digest of Education Statistics, 1991. US. Department
of Education, 1991, p.403.

Understanding learning-style needs of foreign students can help teachers avoid focusing on just their own learning styles and systematically add variety to their teaching patterns. Knowing the ways all students learn, indeed, is very important to good teaching.

II. STATEMENT OF THE PROBLEM

Teaching foreign students is extremely challenging, especially when they are new to America and are just beginning to use spoken English. The teacher must be perceptive and creative to determine which teaching styles may be most effective in teaching these students from different cultural backgrounds. For example, one must be aware that some concepts almost inherent in American culture, are totally non-existent in many other countries. Therefore, special explanations may be required for foreign students when the course content is based on culturally-specific concepts that are new to them. Teaching foreign students does not require expensive programming, but it is important for faculty in all areas to identify students' individual needs and to shape their academic experiences accordingly (Moravcsik, 1985).

III. PURPOSE OF THE STUDY

The main purpose of this research study was: to investigate the learning style preferences of East Asian ESL students at The University of Tennessee, Knoxville, Tennessee. Specifically, this investigator attempted to: (a) identify ethnographic variables that affect the differences in learning styles of these ESL students; and (b) identify self-perceived changes in learning styles of these ESL students since they came to the United States.

IV. RESEARCH QUESTIONS

The investigator explored the following specific concerns:

1. Do East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences?
2. What variables affect the differences in learning styles of these ESL students?
3. Do these ESL students perceive any changes in their learning styles since they came to the United States?

V. HYPOTHESES

The following hypotheses are stated to answer three questions of the study as presented above:

1. East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences.
2. Variables such as gender, age, level of education, field of study, TOEFL score, length of time studying English, length of time in the United States, affect the differences in learning styles of these ESL students.
3. These ESL students perceive some changes in their learning styles since they came to the United States.

VI. SIGNIFICANCE OF THE STUDY

Based on an extensive review of the literature on this topic, there appears to be a paucity of research dealing with learning styles of college-level, East Asian ESL students in the United States.

The University of Tennessee, Knoxville, which is the largest university in Tennessee, currently has 310 students from China, Japan, Korea, and Taiwan (Bahari, 1992). This

number represents 34.73% of all international students presently enrolled at the university. Nationally, approximately one-third of all college-level foreign students (133,855 students) are from these four countries (Smolowe, 1992).

The findings of this study may contribute to the effectiveness of teaching and learning of these college-level ESL students not only at The University of Tennessee, Knoxville, but perhaps at other higher educational institutions in the state of Tennessee and throughout the United States.

VII. ASSUMPTIONS

This present study was conducted under the following assumptions:

1. The translation of the questionnaire directions and statements into the respondents' native languages helped them to understand the concept of each statement more easily. It also encouraged them to respond to the questionnaires willingly and promptly.
2. The respondents answered the questionnaires honestly and consistently.

3. The respondents were able to identify and report their actual learning style preferences.

VIII. LIMITATION OF THE STUDY

The implications and conclusions that were drawn from this investigation were limited to the data obtained from East Asian (Chinese, Japanese, Korean, and Taiwanese) ESL students at The University of Tennessee, Knoxville.

The target group (140 Chinese, 54 Japanese, 72 Korean, and 48 Taiwanese), represents 34.73% of all international students currently enrolled at the university (Bahari, 1992). (This percentage corresponds almost exactly to the approximately one-third of all foreign students in the United States who come from these four countries (Smolowe, 1992).)

IX. DEFINITION OF TERMS

The following operational definitions were used consistently throughout the study:

1. ESL Students refers to students from East Asian countries, whose native and/or official languages are other than English, and who are studying or planning to study at The University of Tennessee, Knoxville,

Tennessee. The study will be conducted with students from China, Japan, Korea, and Taiwan. These nations have ranked among the top 10 countries of origin who have their students enrolling in U.S. institutions of higher education.

2. Learning Style Preferences refers to basic perceptual learning approaches and preferences used by learners. In this study, the preferences are categorized into the following six groups:
 - a. VISUAL learning preference is when one learns best from seeing words or pictures in books (i.e., on the chalkboard, in work books).
 - b. AUDITORY learning preference is when one learn best from hearing words (i.e., lectures, audiotapes, class discussions) and from oral explanations.
 - c. KINESTHETIC learning preference is when one learns best by experience, by being involved physically in classroom experiences.
 - d. TACTILE learning preference is when one learns best when having the opportunity to do "hands-on" experiences with materials.
 - e. GROUP learning preference is when one learns and remembers best when studying with at least one other student, and will be more successful completing work well when working with others.

- f. INDIVIDUAL learning preference is when one learns and remembers best when working alone.
3. China: People's Republic of China
 4. Korea: Republic of Korea
 5. Taiwan: Republic of China
 6. Chinese Student: Student from the People's Republic of China
 7. Korean Student: Student from the Republic of Korea
 8. Taiwanese Student: Student from the Republic of China
 9. TOEFL: Test of English as a Foreign Language. The minimum score of 525 is required for admission consideration to The University of Tennessee, Knoxville.
 10. UTK: The University of Tennessee, Knoxville

X. METHODOLOGY

The subjects for this study were drawn from The University of Tennessee, Knoxville, Tennessee. The subjects were East Asian ESL students from China, Japan, Korea, and Taiwan who were currently enrolled at The University of Tennessee, Knoxville. The target population represented approximately one-third of all international students currently enrolled at the university (Bahari, 1992).

The primary instrument used in this study was a replication of Professor Joy M. Reid's "Perceptual Learning

Style Preference Questionnaire" (1984). Professor Reid's questionnaire consists of randomly arranged sets of five statements on each of the six learning style preferences to be measured: visual, auditory, kinesthetic, tactile, group, and individual. Her survey was constructed and validated for non-native speakers (Reid, 1987). Since the learning style preference questionnaire is replicated from Professor Reid's instrument, which was constructed and validated for non-native speakers, no pilot study was needed for this research.

The instrument used in this study was a self-reporting questionnaire developed from Professor Reid's "Perceptual Learning Style Preference Questionnaire" (1984). The questionnaire consisted of three major parts: a formal ethnographic questionnaire; Professor Reid's 30 perceptual learning style preference statements; and an open-ended, self-report of changes in learning styles since coming to study in the United States.

The survey included: a cover letter providing information about the study and the researcher and the questionnaire in English and translated into each participant's native language.

After the questionnaire had been returned, answers from Part I and Part II of the instrument were transcribed onto the Excel Version 4.0 Program on the Macintosh. The

individual ethnographic variables and the responses from the learning style questionnaires were descriptively analyzed. Answers from Part III of the questionnaire were categorized and summarized to report whether the ESL students perceive that their learning styles have changed in response to their academic and non-academic experiences in the United States.

XI. ORGANIZATION OF THE STUDY

The basic structural format of the research study is organized into five chapters, a list of references, and appendices.

Chapter I includes the introduction, the statement of the problem, the purpose of the study, the significance of the study, the limitation of the study, the assumptions, the definition of terms, the methodology, and the organization of the study. Chapter II presents a review of the related literature. Chapter III details the methods and procedures used to conduct the study and to collect the data. The presentation and analysis of the data, discussion and conclusions appear in Chapter IV. Chapter V includes a summary and implications resulting from the study. Recommendations, suggestions for further research, and closing statements are also given in this chapter.

CHAPTER II

REVIEW OF THE LITERATURE

I. INTRODUCTION

Approximately one third of the more than 400,000 foreign students in American colleges and universities in 1991 were from four East Asian countries -- China, Japan, Korea, and Taiwan (Smolowe, 1992). No studies were found by this researcher which focused upon the learning styles of college-level East Asian ESL students.

The review of related literature presented here is based upon research studies and articles from educational journals, non-educational magazines and newsletters, textbooks discussing learning and teaching styles, data based documents, ERIC guides, and reference books from the period of 1960 through 1992. A complete listing of sources is given in the attached bibliography.

The organization of this review includes: (1) learning styles; (2) learning styles and different cultural backgrounds; (3) learning styles and second-language learning; (4) learning styles and teaching styles; and (5) learning styles and counseling.

II. LEARNING STYLES

Interest in learning styles developed out of the post-Thorndike proposal that **how** information is presented to students may be more important to the learning process than the general aptitude of students (Marshall, 1987).

Bruner (1960) and Bloom, Hastings, and Madaus (1971) claimed that most students could be adequately taught if appropriate procedures were used. This appropriateness depends on variables that included the needed time for instruction, teaching methods, and learning styles of the students.

During the past decade, educational research has identified a number of factors that account for some of the differences in how students learn. One of these factors, learning styles, is broadly described as "cognitive, affective, and psychological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1979, p.4). The implications for instruction are quite clear as expressed in the following quote:

The articulation, isolation, and identification of a person's individual learning style creates the mechanism for individualizing instruction. Research on learning styles explains why, in the same family, certain children perform well in school whereas their siblings do not. It demonstrates the differences in style among individual

members of the same class, culture, community, profession, or socioeconomic groups; it also reveals the differences and similarities between groups. It shows how boys' styles differ from girls' styles, and it explains the differences between youngsters who read well and those who read poorly. (Dunn, Shea, Evan, & MacMurren, 1991, p.93)

According to Kolb (1981, 1984), learning style develops as a consequence of heredity factors, previous life experiences, and the demand of the present environment. Although learning style is relatively stable, qualitative changes result from maturation and environmental stimuli (Cornett, 1983). Sternberg (1990) argues that styles of thinking and learning, which differ widely among and within individuals, are as important as levels of ability and that institutions should treat all styles equally through their instructional, organizational, and delivery systems.

Dunn (1991) states that learning style is the way each learner begins to concentrate, process, and retain new and difficult information. This interaction occurs differently for everyone. To identify a person's learning style, it is necessary to examine his or her multidimensional characteristics to determine what is most likely to trigger concentration, maintain it, and cause long-term memory.

Different pioneers recognized individual differences based on their unique experiences, named the characteristics

they observed, and began to describe them in ways that made sense to them. Most theories share certain commonalities. Some models are personality (Gregorc and Butler, 1984; Kolb, 1976; Myers, 1976; Witkin, 1954); social interaction (Fuhrman and Grasha, 1983; Reichmann and Grasha, 1974); and instructional preference (Canfield, 1988; Hill and Nunnery, 1973). Although research with some models is extensive, the instructional preference model of Canfield (1988) has a relatively weak research base (Matthews, 1991). Also, a gap appears to exist in the literature concerning differences between races in regard to learning styles (Claxton and Murrell, 1987).

Variables such as sex, language practice, affective and sociocultural variables, attitudes and motivation, career choice, personality, field of study, level of education, TOEFL score, and age are related to differences in learning styles and strategies (Ehrman and Oxford, 1989; Gradman and Hanania, 1991; Matthews, 1991; Reid, 1987).

III. LEARNING STYLES AND DIFFERENT CULTURAL BACKGROUNDS

Perhaps one of the major concerns in higher education is the question of how to value and structure classroom teaching in light of the challenges to established teaching modes brought about by the increasing social and cultural

diversity of college students (Anderson and Adams, 1992).

Research by Witkins (1976) has shown differences in the global and abstract functioning in different cultures; that is, different modes of thinking are characteristic of different cultures.

Research on cultural differences in learning styles indicates, for example, that members of industrialized societies and members of non-industrialized societies respond to visual illusions quite differently (Glick, 1975). Lesser, Fifter, and Clark (1965), who studied ethnic groups in elementary schools, found that the pattern of mental abilities (e.g., visual, spatial, abstract, and numerical) displayed by middle-class and lower-class Chinese children, differed significantly from the pattern displayed by middle-class and lower-class Jewish children.

Flaugher's (1971) later study with high school students showed similar differences. In fact, research by Ramirez and Price-Williams (1974) and Gonzalez and Roll (1985) questioned the validity of standardized intelligence tests on the basis of cross-cultural differences in cognitive style.

Trayer (1991) recommends in her study of learning style differences between gifted and regular language students, that a variety of methodologies be used in the foreign language classroom to accommodate the variety of

students present. The teacher can give a learning style inventory to find out the makeup of the class. With few exceptions, every class will have all styles represented. The results from Trayer's study also suggest that gifted students may differ from others in the degree to which their learning style preferences are differentiated. Perhaps these students are able to use this differentiation to self-select into languages whose cultures and interactional styles support their preferences.

Another study was done to compare learning style preferences among gifted African-American, Mexican-American, and American-born Chinese middle grade students (Ewing and Yong, 1992). Results indicated significant group differences in preferences for noise, light, visual modality, studying in the afternoon, and persistence. Significant gender differences were found in preferences for the tactile modality and intake. Significant grade differences were found in preferences for temperature (warm/cool environment) and mobility. The findings of the study clearly suggest that the learning environment should be adapted to accommodate the learning style preferences of gifted minority students and knowledge of individual learning styles may be important in planning truly specialized educational programming for these gifted students from different cultural backgrounds. Adapting

the curriculum to meet the needs of these groups is imperative in order to help them reach their fullest potential.

✓ Messick (1976) concluded that ethnic groups, independent of socioeconomic status, display characteristic patterns of abilities that are strikingly different from one another. For example, research in cognitive psychology and anthropology provides ample evidence of differences among Americans from African-American, Asian, Latino, Native American, and European heritages. These differences occur in information processing, memory, problem-solving, and thinking. In many cases, the differences appear even when disparate samples of ethnic backgrounds are matched for socioeconomic status.

Lesser (1976) found that,

✓ ... people who share a common culture background will also share, to a certain extent, common patterns of intellectual abilities, thinking styles, and interests. (p.137)

More specifically, studies where there have been examinations of different groups' orientations to cultural values (i.e., human nature, nature, human activity, time, social organizations) support the contention that nontraditional groups who share common conceptualizations about basic values, beliefs, and behavior, exhibit similar socialized differences and stylistic learning preferences (Carter, 1990).

IV. LEARNING STYLES AND SECOND-LANGUAGE LEARNING

Historically, interest and research in second-language learning styles has focused on learning styles (with some behavioral applications) and on conscious learning strategies. Much of this work concerns the interaction of cognitive styles and affective variables with real-life situational demands (Brown, 1974; Ellis, 1988; Ely, 1986; Hatch, 1974; Heyde, 1977; Naimann, Fröhlich, and Todesco, 1975; Tarone, Swain, and Fathman, 1976; Tucker, Hamayan, and Genesee, 1976). Other studies have concentrated on the role of affective elements and cognitive styles in academic achievement (Abraham, 1983; d'Anglejan, Painchaud, and Renaud, 1986; Bassano, 1986; Bialystok, 1985; Chapelle and Roberts, 1986).

ESL teachers should become aware of cultural as well as linguistic differences among their students. They should combine cultural awareness, sensitivity, and knowledge in planning and delivering instruction. The process of learning English in bilingual and ESL classrooms, and in particular, the role of cultural factors in second-language acquisition, have been examined (Saville-Troike, 1976; Wong Fillmore, 1986). The research indicated that language and education are inseparable from culture. Teaching English as a second language, therefore, entails teaching

elements of English as a second culture. Teachers should give thought to minimizing interference in the language process, and consider the cultural content an "addition" of new concepts and behaviors to be used when appropriate (in school), and not as a "replacement" of home culture. They should consider the English language itself as an addition rather than a replacement for the home language.

For foreign students, patterns of learning and classroom activity in the new institution can be very different. Sometimes the differences are startling even when the host culture and the home culture might be considered somewhat similar and without a serious language barrier (Klineberg and Hull IV, 1979). Problems of adjustment do occur. The language problem extends into any discussion of academic quality, information transfer, curricular relevance, and services to foreign students (Kaplan, 1984). Students who do not understand the educational language cannot benefit from instruction, counseling, or any of the other services offered to them.

The conscious learning strategies of non-native speaking students (e.g., practicing, monitoring, inferencing, memorizing, and self-directed learning) have also been investigated (Bialystok and Fröhlich, 1978; Carver, 1984; Krashen, 1982; Oxford-Carpenter, 1985; Wenden, 1984, 1986).

Saville-Troike (1976) states:

Education in many other cultures stresses learning by memory and rote, or by observation (without doing and without explanation). Many social groups consider it highly inappropriate for anyone to try to do something he has not already learned how to do correctly by observation. To try and fail would be humiliating. It may be considered impolite for children to ask adults questions, or this too may be considered an inappropriate mode of learning. In some of these cases, children's questions are discouraged by adults conveying the concept that children should observe and think so they will know the answer for themselves. Time may be irrelevant to learning; many cultures value correctness more than speed (p.58).

Recently, there have been investigations about culture-specific modes of learning (Scribner and Cole, 1981; Wagner, Messick, and Spratt, 1986). Scribner and Cole's (1981) research was devoted primarily to the question of whether (or how much) individual literacy skills affect individual learning development. They sought to disentangle the effects of literacy from other social factors (such as schooling and social class) on adult learning in Liberia. In contrast to Scribner and Cole, Wagner, Messick, and Spratt (1986) focused on children's learning and literacy acquisition in the home and school. They investigated a general instance of first language versus second language reading acquisition, modified by special language features in Moroccan society. The findings of the study indicated that "literacy may be 'mandated' by government authorities,

but its acquisition and maintenance are surely dependent on the cultural beliefs, practices, and history within which it resides (p.259)". To study literacy in a complex multilingual, multicultural, and multiclass society, the researchers created a research design which attempted to capture some of the effects of natural diversity.

Omaggio (1978) and Cohen (1984) have found that non-native speakers can successfully identify and describe their second-language strategies. Other research includes Wong's (1985) discussion of the learning style of limited-English-proficient Asian students and Wenden's (1986) overview of the successful language learner. This research in second-language learning has revealed that individuals vary in the strategies they employ due to differences in learning styles, affective styles, and cognitive styles.

One of the research findings by Matthews (1991) indicated some learning style differences among genders, but no race differences, among first-year college students. Findings from the study suggested a need for administrative and instructional changes.

Reid's (1987) research concludes that non-native speakers' learning style preferences often differ significantly from those of native speakers, and that ESL students from different language backgrounds sometimes

differ from one another in their learning style preferences. Since styles differ widely within ethnic backgrounds, instructors should use a variety of teaching methods in order to satisfy the needs of all students in a given class (Kreuze and Payne, 1989).

Hansen-Strain (1989) also found that the discourse or language of learning situations is affected by cultural background. She cites research showing both spoken and written language variations among two South Pacific and three Asian groups of college students (i.e., planned vs. spontaneous language; content focus vs. interpersonal focus in language; formal language styles vs. informal, personal language usage; relative use of and facility in oral vs. written language).

... the kind of first-language discourse L2 learners have experienced also may influence their discourse strengths and preferences for second-language learning. (Hansen-Strain, 1989, p.490)

V. LEARNING STYLES AND TEACHING STYLES

Students appear to learn best when the teaching methods used fit their preferred learning styles. When the teaching method and the learning style preference are not the same, students can experience feelings of insecurity, frustration, anger, anxiety, alienation, and futility (Kreuze and Payne,

1989). Instructors should recognize that students do learn differently, and what may be the optimal teaching method for some students may discourage others.

One of the contributions of learning style research is to help educators realize that all people possess ways to learn despite their cognitive ability levels. When we consider the variety of learning styles people use, we realize that there is no right or wrong way to learn, but rather, there are styles that tend to be more appropriate for given situations (Cornett, 1983).

Researchers (McCaulley and Natter, 1980; Miller, Alway, and McKinley, 1987; Tobias, 1982) indicate that persons with certain styles of learning do better in school than individuals with other styles. One reason for this difference in performance could be that instruction, counseling, and other personnel services more nearly match the learning styles of those groups who find success (Palmer, 1987; Schmeck, 1983).

Roberts (1977) reports that there are striking differences between students and instructors when learning and teaching styles are compared. Teachers tend to mirror their own learning preferences in their teaching approaches, and learners who exhibit a style preference different from the teacher's, may be plagued by constant anxiety. They consequently react negatively to the teacher, the

environment, and the subject matter (Oxford, Ehrman, and Lavine, 1990). Without an understanding of these style mismatches, it is likely that neither teachers nor students will be able to address the difficulty in a constructive manner. Students have more positive attitudes toward school and achieve more knowledge and skills when taught, counseled, or advised through their natural or primary style rather than through a style that is secondary or undeveloped. This is particularly true when adjusting to a novel and new situation that creates stress (Charkins, O'Toole, and Wetzel, 1985; Dunn, 1988; Vallerand, 1988), such as a beginning experience in higher education.

While teachers generally have an overall instructional style, this does not mean that they cannot add to or modify that style as circumstances warrant. Joyce, Weil and Wald (1981) report success in helping teachers with various teaching styles to learn new models of teaching behaviors that contribute to student learning. An example is the use of "advance organizers." When teachers use advance organizers, they give students the overall structure of the materials to be learned prior to the lesson development. An advance organizer can be as simple as an anecdote or personal experience, which enables students to relate the material to their own past experiences. Once these past experiences are activated, they become the hooks on which

new learning is hung. In learning how to use advance organizers, teachers can widen the scope of their own learning styles as well as their teaching styles. Students can then learn from their teachers' use of advance organizers and also learn how to create their own advance organizers. This process tends to have a ripple effect, resulting in an increased repertoire of strategies for both teacher and learner styles (Joyce, Weil, and Wald, 1981).

Cornett (1983) offers some suggestions for teaching strategies that recognize the varieties of learning styles. These include: (1) use questions of all types to stimulate various levels of thinking; (2) provide a general overview of material to be learned; (3) allow sufficient time for information to be processed and then integrated using both the right and left-brain hemisphere; (4) expect that at least one new thing will be learned by each student; and (5) set clear purposes before any listening, viewing, or reading experience.

Effective teaching cannot be limited to the delivery of information. Effective teachers are those who involve all of their students in learning how to learn. Anderson and Adams (1992) indicate that this generative process of learning is most effective when instructors: (1) affirm the presence and validity of diverse learning styles; and

(2) maximize the climate or conditions for learning in the classroom through the deliberate use of instructional design principles that take account of learning differences, thereby, increasing the possibilities of success for all students.

The learning style problem leads to discussions concerning the teaching style and the instructional design. It is impossible to adopt a teaching style which pleases everyone all the time, yet it is necessary for the teacher to be prepared to modify the approach if this makes students feel more at ease. Bell and Burnaby (1988) stated that teachers will find that students are prepared to adapt to new teaching styles if the transition is made gently, not abruptly.

Carlson (1991) reports in her study that significantly higher observation scores were attained by learners whose style was matched to the design of instruction. She concludes that matching learning style with the design of instruction is of importance with regard to both achievement and attitudes.

VI. LEARNING STYLES AND COUNSELING

The concept of learning styles has gained wide acceptance in a number of educational environments.

Learning styles have been used as a focus for counseling college students (Price and Griggs, 1985) and for assisting students in higher education to realize their full learning potential (Claxton and Murrell, 1987; Cole, 1982).

With a variety of models, the literature in the field identifies advantages of adjusting services to the learning styles of students. For example, Marshall (1985) found that communication between counselor and client was enhanced when both had similar cognitive styles. Griggs (1985) indicated that students with a strong need for structure responded better to the use of formal contracts in counseling which specified desired behavior, expected outcomes, and rewards for meeting specifications of the contract. Likewise, students with a weak need for structure responded well to more open-ended and less well-defined activities and outcomes. When student-development staff taught high-risk students about their learning preferences, so that they could select instructors with teaching styles that more nearly matched their learning styles, students in the experimental group had better grades after just two semesters in school than their counterparts had in the control group (Jenkin, 1981). Would not this same phenomenon be true for potentially high-risk ESL students?

The international student population in the United States has experienced phenomenal growth over the last

three decades. Along with the growth, Charles and Stewart (1991) found that the concomitant adjustment issues for the students can be a source of frustration and disappointment, and a challenge for student affairs professionals. The researchers pointed out that loneliness, homesickness, language difficulty, discrimination, financial problems, and depression are just some of the adjustment problems experienced by many international students. The educational system in the United States may also add to the confusion for some international students because of its dissimilarity to the educational system in their home countries. To be meaningful and effective for international students, it is imperative that the advising and counseling process (Charles and Stewart, 1991) and instructional planning and delivering strategies take into consideration the ESL learners' cultural diversity and unique needs.

VII. SUMMARY

The studies and articles cited in this review offer insights into learning styles, especially focused on the ESL student population, and indicate the need for additional refinement of student variables and sub-groups as well as the addition of new variables (Reid, 1987).

This study will lead to an examination of whether

or not a sample of college-level, East Asian ESL students have distinctive learning styles. In addition, it will report any self-perceived changes in their learning styles as a result of their involvement in the academic setting prevalent in the United States.

CHAPTER III

METHODS AND PROCEDURES

I. INTRODUCTION

The purpose of this research study was to investigate the learning style preferences of East Asian ESL students at The University of Tennessee, Knoxville, Tennessee. Specifically, the following research questions were investigated:

1. Do East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences?
2. What variables affect the differences in learning styles of these ESL students?
3. Do these ESL students perceive any changes in their learning styles since they came to the United States?

This chapter is a description of the methods and procedures utilized and contains: (a) the description of the population; (b) the description of the survey instrument; and (c) the procedures.

II. POPULATION

All of the subjects for this research investigation were drawn from The University of Tennessee, Knoxville. Knoxville, Tennessee is a city located in East Tennessee with a population of 165,121. Knoxville's ethnic/racial distribution is: 82.73% Whites; 15.78% African-American; 0.66% Latino; and 1.03% Asian (Census of Population and Housing Summary Tape File 1A, 1990). The population density is 312 per square mile in 1992 with 69,973 households (Tennessee Community Data, 1992).

The specific ethnic/racial population of The University of Tennessee, Knoxville is 89.68% White; 5.44% African-American; 0.87% Latino; and 3.79% Asian (Student Data Analysis, UTK, 1993).

Permission to conduct the research study was obtained from The University of Tennessee's Committee for Protection of Human Subjects.

III. SUBJECTS

The subjects for this study consisted of the total number of East Asian ESL students from China, Japan, Korea, and Taiwan enrolled in Fall semester, 1992 at The University of Tennessee, Knoxville. The students' native and/or

official first languages were languages other than English. This target population represented approximately one-third of all international students currently enrolled at the university (Bahari, 1992).

IV. INSTRUMENTATION

The research design used in this study was survey research. The instrument used was a questionnaire (Appendix A).

The primary instrument used in this study (Appendix B) was a replication of Professor Joy M. Reid's "Perceptual Learning Style Preference Questionnaire" (1984). Professor Reid had given her full written permission and encouragement for the researcher to use her questionnaire in this study (Appendix C).

Based on existing learning style instruments, Professor Reid constructed a new self-reporting questionnaire with suggestions for improvements from non-native speaking informants and U.S. consultants in the fields of linguistics, education, and crosscultural studies. The purpose of the questionnaire was to determine the students' preferences in the areas of visual, auditory, kinesthetic, tactile, group learning, and individual learning. The questionnaire was then validated for non-native speakers

using the split-half method. Correlation analysis of an original set of 60 statements (10 per learning style) determined which five statements should remain within each subset.

Professor Reid's questionnaire (1984) was voluntarily completed by 1,234 participants from 39 intensive English language programs which included students from 98 countries, 29 major fields, and 52 language backgrounds.

The questionnaire, used in the present research study, was developed by the principal investigator, and is based on Professor Reid's "Perceptual Learning Style Preference Questionnaire." The specific adaptations to the original instrument follow.

1. Part I, ethnographic data, was based upon Professor Reid's questionnaire. The following changes were made for this study.
 - a) "Name" was eliminated.
 - b) "How long have you studied English in the U.S.?" was changed to "How long have you studied in the U.S.?"
 - c) "Date of TOEFL" was eliminated.
 - d) "AS THEY APPLIED TO YOUR STUDY OF ENGLISH." was changed to "as they apply to your college/university studies."
 - e) In order to facilitate computer analysis, all

- possible ethnographic responses were listed and numbered for the respondent to check (✓).
- f) A coded number was used on each questionnaire in order to preserve each respondent's confidentiality, and to enable a follow-up questionnaire to be sent, if necessary.
2. Part III was added as an open-ended, self-report of changes in learning styles since the respondents came to study in the United States. The responses from this part were categorized and summarized to report as the answer to the third research question: Do these ESL students perceive any changes in their learning styles since they came to the United States?
3. The whole questionnaire was translated into three different native languages of the respondents: Chinese (used in both China and Taiwan), Japanese, and Korean (Appendix A). The translated version accompanied the English version statement by statement for the respondents' convenience. The researcher assumed that the translation into the respondents' native languages would help them to understand the concept of each statement more easily and encourage them to respond to the questionnaires

willingly and promptly.

The questionnaire (Appendix A) used in this study consisted of three major parts: a formal ethnographic questionnaire; Professor Reid's 30 perceptual learning style preference statements; and an open-ended, self-report of changes in learning styles since coming to study in the United States.

Since the perceptual learning style preference questionnaire was replicated from Professor Reid's instrument, which had been constructed and validated for non-native speakers, no pilot study was needed for this research.

V. PROCEDURES

Procedures for this study are divided into three major steps: procedures for designing the study; procedures for collecting data; and procedures for data analysis and writing the report.

Procedures for Designing the Study

The adopted questionnaire consisted of three major parts: a formal ethnographic questionnaire; Professor Reid's 30 perceptual learning style preference statements; and an open-ended, self-report of changes in learning styles

since coming to study in the United States.

Contacts were made with Mrs. Diane C. Cudahy, Coordinator of International Programming, and Mr. David P. Lawson, Coordinator of International Student Services, The University of Tennessee, Knoxville, to gather all information about:

1. total numbers, names and addresses of East Asian (Chinese, Japanese, Korean, and Taiwanese) students currently enrolled at The University of Tennessee, Knoxville; and
2. names and addresses of student representatives of Chinese Students & Scholars (PRC), the Japanese Student Group, the Korean Student Association, and the Chinese Student Association (Taiwan).

Further contacts were made with the student representatives to get assistance for the translation of the questionnaire statements into each native language (Chinese, Japanese, and Korean) of the participants.

Procedures for Collecting Data

The survey sent to all subjects included: a cover letter in English and each native language (Appendix D), providing information about the study and the researcher and the questionnaire in English, with an item-by-item

translation into each participant's native language. The instrument was mailed in September, 1992 to all 314 subjects: 140 Chinese, 54 Japanese, 72 Korean, and 48 Taiwanese. The researcher believes that the promise of anonymity, the promise of confidential treatment of participant responses (stated in the cover letter), and the translation into native languages combined to help improve the response rate. A stamped, self-addressed return envelope was provided to facilitate and to encourage the respondents' return of the completed questionnaire.

Six weeks after the initial mailing, 190 (60.51%) of the questionnaires had been returned (Table 2). Eight weeks after the initial mailing, a follow-up survey with a reminding cover letter (Appendix E) was sent to 124 (39.49%) participants who had not returned the first one.

TABLE 2
QUESTIONNAIRE RETURN RATE

Country of Origin	Total	Questionnaire 1st Return Rate		Questionnaire 2nd Return Rate		Total	
	N	N	%	N	%	N	%
China	140	91	65.00	14	10.00	105	75.00
Japan	54	37	68.52	5	9.26	42	77.78
Korea	72	38	52.78	8	11.11	46	63.89
Taiwan	48	24	50.00	10	20.83	34	70.83
TOTALS	314	190	60.51	37	11.78	227	72.29

It was felt that this follow-up would be a sufficient reminder to those students that their participation in the study was essential for its successful completion. The reminder generated 37 (11.78%) additional surveys. Final compilation of the responses revealed a return of 227 (72.29%) completed questionnaires (Table 2).

Since the researcher achieved a 72.29 percent response rate after the follow-up survey, he decided not to proceed with further follow-up to the 87 (27.71%) non-respondents. Babbie (1973) has stated that "a response rate of at least 50 percent is adequate for analysis and reporting" while "a response rate of at least 60 percent is good and 70 percent is very good" (p.165).

Procedures for Data Analysis and Writing the Report

After the questionnaires had been returned, answers from Part I and Part II were entered into the Excel Version 4.0 Program on the Macintosh. The individual ethnographic variables and the responses from the learning-style questionnaires were descriptively analyzed.

Information about the ethnographic variables was grouped and recorded as shown in tables included in Chapter IV. Preference means for each set of learning style statements were classified into three ranges: first, second, and last preference. They were also recorded in

tables presented in Chapter IV. These tables provide a convenient means of comparing the respondents' responses to each category of the questionnaire. Standard error of mean was provided in the tables along with each mean to determine if the means were statistically different.

Answers from Part III of the questionnaire were categorized and summarized to report whether the ESL students perceived that their learning styles had changed in response to their academic and non-academic experiences in the United States.

After analysis, a report was written which provides summaries and discussions on: 1) the most commonly-used learning styles; 2) the least commonly-used learning styles; 3) any significant differences in learning styles according to ethnographic variables; 4) self-perceived changes in learning styles since coming to the United States; and 5) implications for further research.

In order to maintain anonymity and confidentiality, the name of each respondent was replaced with a coded number. In addition, the analysis was based upon all four cultural groups (Chinese, Japanese, Korean, and Taiwanese), and not upon individual responses.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

I. INTRODUCTION

Chapter IV contains the derived results from the analysis of the data collected from the questionnaire survey of 227 East Asian ESL students enrolled in the Fall semester, 1992, at The University of Tennessee, Knoxville, following the procedures discussed in Chapter III.

The major purpose of this study was to investigate the learning style preferences of the above subjects. Specifically, this research investigation attempted to:

- (a) identify ethnographic variables that affect the differences in learning style of these ESL students; and
- (b) identify self-perceived changes in learning styles of these students since they came to the United States.

The following three hypotheses were tested in the study:

1. East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences.
2. Variables such as gender, age, level of education, field of study, TOEFL score, length of time studying

English, and length of time in the United States affect the differences in learning styles of these ESL students.

3. These ESL students perceive some changes in their learning styles since they came to the United States.

This chapter is organized into five sections: Introduction; Profile of the respondents; Learning style preferences of individual respondents; Learning style preference means for the respondents by each ethnographic variable; Results of learning style preference means compared by country of origin and multiple demographic variables; Respondents' answers from Part III of the questionnaire; Discussion; and Conclusion.

II. PROFILE OF THE RESPONDENTS

As portrayed in Table 3, 137 (60.35%) of the 227 respondents were male and 90 (39.65%) were female. Table 4 reveals that almost one half, 105 (46.26%), of the total subjects were Chinese. Koreans were the second largest population with 46 (20.26%) students; Japanese were the third largest population with 42 (18.50%) students; Taiwanese were the smallest population with 34 (14.98%) students.

TABLE 3
THE NUMBER OF QUESTIONNAIRES RETURNED
BY GENDER AND COUNTRY OF ORIGIN

COUNTRY OF ORIGIN	GENDER		TOTAL
	MALE	FEMALE	
China	62	43	105
Japan	22	20	42
Korea	34	12	46
Taiwan	19	15	34
N TOTALS	137	90	227
%	60.35	39.65	100.00

TABLE 4
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY COUNTRY OF ORIGIN

COUNTRY OF ORIGIN	N	%
China	105	46.26
Japan	42	18.50
Korea	46	20.26
Taiwan	34	14.98
N TOTALS	227	100.00

Table 5 presents the questionnaire returns by age and shows that most of the respondents were 20 to 34 years of age (72.25%). Twenty-one (9.25%) students were under 20 years old and 42 (18.50%) were over 35. As shown in

TABLE 5
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY AGE

AGE	N	%
Under 20 years	21	9.25
20 - 24 years	34	14.98
25 - 29 years	67	29.52
30 - 34 years	63	27.75
35 years and over	42	18.50
N TOTALS	227	100.00

Table 6, there were 158 (69.60%) graduate and 69 (30.40%) undergraduate students participating in this survey. They were pursuing academic majors in 12 different fields (Table 7): 67 students in Liberal Arts; 64 in Engineering; 25 in Business Administration; 17 in Agriculture; 14 in Education; and 14 in Human Ecology. Ten respondents were studying English at the English Language Institute, UTK. The rest were in Social Work (5), Nursing (4), Communications (3), Medicine (2), and Architecture (2).

TABLE 6
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY CLASS

CLASS	N	%
Graduate	158	69.60
Undergraduate	69	30.40
N TOTALS	227	100.00

TABLE 7
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY MAJOR FIELD

MAJOR FIELD	N	%
Liberal Arts	67	29.52
Engineering	64	28.19
Business Administration	25	11.01
Agriculture	17	7.49
Education	14	6.17
Human Ecology	14	6.17
English Language Institute	10	4.41
Social Work	5	2.20
Nursing	4	1.76
Communications	3	1.32
Architecture	2	0.88
Medicine	2	0.88
N TOTALS	227	100.00

According to Table 8, 142 (62.56%) East Asian students listed TOEFL scores higher than 550, 70 (30.84%) students reported scores from 500 - 549, and 15 (6.60%) students scored lower than 500.

Table 9 indicates the number of respondents related to the length of time studying English in the native countries. One hundred and forty-one (62.11%) subjects reported that they had studied English in their countries for more than five years. Only 15 (6.61%) students (ten were studying at the English Language Institute UTK) had less than one year of English study.

TABLE 8
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY TOEFL SCORE

TOEFL SCORE	N	%
300 - 349	2	0.88
350 - 399	3	1.32
400 - 449	3	1.32
450 - 474	3	1.32
475 - 499	4	1.76
500 - 524	8	3.52
525 - 549	62	27.31
550 - 574	68	29.96
575 and over	74	32.60
N TOTALS	227	100.00

TABLE 9
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY LENGTH OF TIME STUDYING ENGLISH
IN NATIVE COUNTRY

LENGTH OF TIME	N	%
Less than 1 year	15	6.61
1 - 3 years	34	14.98
3 - 5 years	37	16.30
More than 5 years	141	62.11
N TOTALS	227	100.00

As shown in Table 10, the number and the percentage of respondents who answered the length of time living in the United States and the number and the percentage of respondents who answered the length of time studying in the United States were close. More than 60 percent of the respondents lived and studied in this country for more than two years, and approximately 15 percent lived and studied here less than one year.

TABLE 10
THE NUMBER AND PERCENTAGE OF QUESTIONNAIRES RETURNED
BY LENGTH OF TIME LIVING IN THE UNITED STATES
AND LENGTH OF TIME STUDYING IN THE UNITED STATES

LENGTH OF TIME	LIVING IN U.S.		STUDYING IN U.S.	
	N	%	N	%
Less than 3 months	9	3.96	11	4.84
3 - 6 months	10	4.41	11	4.84
7 - 11 months	14	6.17	18	7.93
12 - 17 months	30	13.21	31	13.66
18 months - 2 years	12	5.29	10	4.41
Over 2 years	39	17.18	41	18.06
Over 3 years	113	49.78	105	46.26
N TOTALS	227	100.00	227	100.00

III. LEARNING STYLE PREFERENCES OF INDIVIDUAL RESPONDENTS

The individual responses were categorized according to the learning style preferences. The answers from Part II of the questionnaire were entered onto the Scoring Form (Appendix G) based on Professor Reid's Scoring Form (Appendix F). There are five questions for each learning style category in the questionnaire. On the Scoring Form, the questions are grouped according to each learning style. Each question has a numerical value: 5 = strongly agree; 4 = agree; 3 = undecided; 2 = disagree; and 1 = strongly disagree. The answers from all respondents were filled in with the numerical value of each answer. The numbers were added and totals were given. Learning style preference scores for each category were classified into three ranges: first preference; second preference; and last preference. The first preference was defined as the highest score among the six preferences. The second preference was defined as the second highest score among the six preferences. The last preference was defined as the lowest score among the six preferences. According to the numerical value of each answer, the preference scores could range from five, the lowest score, to 25, the highest score.

Table 11.1 presents the learning style preferences of individual respondents as they related to countries of origin.

TABLE 11.1
LEARNING STYLE PREFERENCES
OF INDIVIDUAL RESPONDENTS
BY COUNTRY OF ORIGIN

COUNTRY OF ORIGIN	PREFERENCE	LEARNING STYLE					
		VISUAL	AUDITORY	KINESTHETIC	TACTILE	GROUP	INDIVIDUAL
China (N=105)	First	37	16	25	22	6	29
	Second	26	28	21	33	13	22
	Last	9	10	12	9	58	25
Japan (N=42)	First	2	4	19	17	2	11
	Second	8	8	11	18	2	4
	Last	10	5	2	0	23	8
Korea (N=46)	First	15	8	14	15	3	12
	Second	11	17	9	15	5	8
	Last	4	0	4	0	30	13
Taiwan (N=34)	First	12	7	8	11	2	6
	Second	8	14	12	6	5	5
	Last	3	3	0	2	17	12

Note: Discrepancies between the totals for each group and the total number of respondents for each learning style preference are due to the fact that some respondents indicated more than one preference.

Among the Chinese, the largest number (37) reporting the first preference was visual learning style, while the largest number (33) for the second preference was tactile, and the largest number (58) for the last preference of learning styles was group learning.

The Japanese revealed somewhat different results. More respondents, 19, chose kinesthetic as their first preference, 18 chose tactile as their second preference, and 23 selected group learning as their last preference.

Fifteen Korean respondents reported having both visual and tactile as their most preferred learning styles. Auditory was selected as the second preference by 17 respondents, and 30 students had group learning as their last preference.

Twelve Taiwanese students chose visual learning style as their first preference, 14 respondents scored auditory as their second preference, and 17 selected group learning as their last preference of learning style.

According to Table 11.1, discrepancies between the totals for each group and the total number of respondents for each learning style preference are due to the fact that some respondents indicated more than one preference.

TABLE 11.2
LEARNING STYLE PREFERENCES
OF INDIVIDUAL RESPONSES

PREFERENCE	LEARNING STYLES					
	VISUAL	AUDITORY	KINESTHETIC	TACTILE	GROUP	INDIVIDUAL
First	66	35	66	65	13	58
Second	53	67	53	72	25	39
Last	26	18	18	11	118	58

As shown in Table 11.2, the three most often reported first preferences were: visual (66); kinesthetic (66); tactile (65). The three most often reported second preferences were: tactile (72); auditory (67); visual and kinesthetic (53 each). The three most often reported last preferences were: group learning (118); individual learning (58); visual (26).

IV. LEARNING STYLE PREFERENCE MEANS

The individual student variables and the responses from the questionnaires were descriptively analyzed. Learning style preference means for each set of variables were classified into three ranges: first, second, and last learning style preferences. The first preference was defined as the highest mean score among the six preferences. The second preference was defined as the second highest mean score among the six preferences. The last preference was defined as the lowest mean score among the six preferences. (These preference mean scores may range from 5.00, the least preferred, to 25.00, the most preferred.) Standard error of the mean was provided in each of the following tables along with the mean to determine if the means were statistically different.

Tables 12 - 21 show the learning style preference means according to each ethnographic variable.

Table 12 reveals that both male and female students indicated multiple preferred learning styles. Male students had visual, kinesthetic, and tactile learning as their most preferred learning styles. Female students had visual, auditory, kinesthetic, and tactile as their most preferred learning styles. Male students selected auditory and individual learning as their second preferred learning styles while female students selected only individual learning. Both males and females had group learning as their last preference.

TABLE 12
LEARNING STYLE PREFERENCE MEANS
BY GENDER

GENDER	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Male	18.67	0.29	17.72	0.24	18.26	0.28	19.18	0.26	14.70	0.33	18.01	0.30
Female	18.53	0.35	18.38	0.30	18.93	0.34	19.30	0.30	15.24	0.40	17.99	0.35
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

As shown in Table 13, students under 20 years of age reported auditory, kinesthetic, tactile, and individual learning styles as their first preferences, and visual and group learning as their least preferred learning styles. Students between 20-24 years preferred all learning styles except group learning. Students between 25-29 preferred visual, kinesthetic, and tactile as their first preferences, auditory and individual learning as their second preferences, and group learning as their last preference.

Students between 30-34 reported visual, kinesthetic, tactile, and individual learning as their first preferences, auditory as their second preference, and group learning as their last preference. Students of 35 years and over preferred visual, auditory, kinesthetic, and tactile learning to individual and group learning.

TABLE 13
LEARNING STYLE PREFERENCE MEANS
BY AGE

AGE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Under 20	15.81	0.75	18.86	0.54	19.05	0.73	19.19	0.71	15.48	0.96	16.52	0.64
20-24	18.12	0.54	18.21	0.51	19.35	0.53	19.85	0.44	14.12	0.72	16.52	0.54
25-29	18.93	0.39	17.99	0.36	19.24	0.38	19.52	0.38	15.76	0.45	17.51	0.37
30-34	18.79	0.42	17.22	0.34	17.52	0.42	18.87	0.35	13.40	0.46	18.97	0.49
35 +	19.67	0.39	18.48	0.42	17.95	0.52	18.79	0.48	16.21	0.47	17.14	0.53
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.33

Table 14 presents the learning style preference means according to country of origin of the respondents. All four nationalities reported group learning as their last preference. China, Korea, and Taiwan shared the first preferences in visual, auditory, kinesthetic, tactile, and individual learning, while Japan strongly reported only kinesthetic and tactile as the first preferences, and auditory and individual learning as the second preferences. As a whole, the East Asian ESL students reported no significant learning style preference with group learning being their last preference.

TABLE 14
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN

COUNTRY OF ORIGIN	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
China	18.83	0.32	17.83	0.26	17.81	0.32	18.41	0.29	15.16	0.36	17.98	0.35
Japan	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.58	17.93	0.44
Korea	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55
Taiwan	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.68	17.94	0.60
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

The learning style preference means by language are shown in Table 15. The Chinese-speaking students (Chinese and Taiwanese) and the Korean-speaking students indicated the same first preferences (visual, auditory, kinesthetic, tactile, and individual learning) and the same last preference (group learning). Japanese-speaking students reported kinesthetic and tactile as their first preferences, visual, auditory, and individual learning as their second preferences, and group learning as their last preference.

TABLE 15
LEARNING STYLE PREFERENCE MEANS
BY LANGUAGE

LANGUAGE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Chinese	18.93	0.27	17.85	0.23	18.11	0.27	18.62	0.25	15.19	0.32	17.97	0.30
Japanese	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44
Korean	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Divided by class, as presented in Table 16, graduate students favored visual, tactile, and kinesthetic learning styles, while undergraduate students chose only kinesthetic and tactile as their first preferences. Both groups, however, agreed that group learning was their last preference.

TABLE 16
LEARNING STYLE PREFERENCE MEANS
BY CLASS

CLASS	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Graduate	19.11	0.23	17.82	0.22	18.13	0.26	18.97	0.24	14.99	0.29	18.06	0.28
Undergr.	17.48	0.46	18.35	0.35	19.43	0.37	19.81	0.35	14.74	0.51	17.88	0.41
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Table 17 includes learning style preference means controlled by 12 major fields. Results from the means by class of the respondents in education, human ecology, and medicine indicated no statistical differences. Students in business administration, liberal arts, and social work preferred all learning styles except the group learning. Students in architecture and nursing preferred all learning styles except individual learning. Students in communications and engineering indicated visual, kinesthetic, and tactile as their first preferences, auditory and individual learning as their second preferences, and group learning as their last preference. Students in agriculture chose visual, kinesthetic, tactile, and individual learning as their first preferences, auditory as their second preference, and group learning as their last preference. The students at the English Language Institute preferred kinesthetic and tactile as their first preferences, chose visual, auditory, and individual learning as the second preferences, and group learning as the last preference.

TABLE 17
LEARNING STYLE PREFERENCE MEANS
BY MAJOR FIELD

MAJOR FIELD	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Agri.	19.82	0.61	15.65	0.56	17.24	0.72	17.59	0.85	13.88	0.74	19.76	0.85
Arch.	17.50	1.50	21.50	1.50	23.00	2.01	21.50	3.51	21.00	4.01	16.00	0.00
Bus.Ad.	18.44	0.84	17.84	0.59	19.04	0.61	19.48	0.60	14.76	0.68	18.00	0.49
Comm.	18.67	1.20	17.00	0.58	20.33	0.66	20.00	0.58	13.33	2.85	18.33	0.33
Educ.	17.79	0.58	17.57	1.01	18.21	1.04	17.43	0.85	15.00	0.77	17.36	1.04
Engi.	19.16	0.37	18.28	0.32	18.61	0.43	19.72	0.34	15.66	0.48	17.86	0.45
Human Eco.	17.57	0.94	18.07	0.85	18.36	0.80	19.71	0.85	16.14	1.13	16.86	1.09
Lib.Arts	18.39	0.42	18.13	0.33	18.15	0.38	18.97	0.34	14.37	0.50	18.24	0.40
Med.	16.50	2.51	18.00	1.00	20.50	0.50	17.00	4.01	15.00	4.01	16.00	2.01
Nurs.	18.75	1.93	19.75	1.31	17.25	1.43	17.75	1.11	16.75	2.46	13.75	1.43
Other	16.00	1.09	18.50	0.81	21.30	1.20	21.80	0.32	13.30	1.17	17.80	1.16
Soc.Work	21.60	1.91	18.20	1.91	17.40	1.63	19.80	1.02	13.60	1.63	21.00	1.58
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning style preference means controlled by TOEFL scores are shown in Table 18. The preference means by TOEFL score of students who had scores between 300-399 and 450-499 showed no statistical differences. Students who had scores between 500-549 and 575 and over preferred all learning styles but group learning. Students who had scores between 400-449 favored visual, kinesthetic, tactile, and individual learning but auditory and group learning. Students with scores between 550-574 chose auditory, kinesthetic, tactile, and individual learning as their first preferences, auditory as their second preference, and group learning as their last preference.

TABLE 18
LEARNING STYLE PREFERENCE MEANS
BY TOEFL SCORE

TOEFL SCORE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
300-349	15.50	1.50	17.50	1.50	21.00	2.10	20.50	1.50	14.00	5.01	18.50	2.51
350-399	17.67	1.67	17.67	1.46	17.67	1.67	17.00	1.53	14.00	1.73	18.33	2.85
400-449	16.67	3.18	17.33	0.88	22.67	1.46	22.33	1.77	16.00	1.00	16.67	1.67
450-474	18.33	0.66	16.00	1.00	18.33	2.40	18.33	2.33	12.00	2.52	21.67	3.33
475-499	16.00	1.08	18.50	1.55	19.50	2.96	19.50	2.40	13.00	2.64	19.25	1.31
500-524	17.75	0.92	18.00	1.15	20.75	1.28	21.25	0.84	14.63	1.16	18.00	1.18
525-549	18.81	0.43	18.34	0.41	18.68	0.36	18.85	0.36	15.03	0.49	17.85	0.41
550-574	18.91	0.41	18.01	0.32	18.46	0.40	19.50	0.32	14.97	0.44	18.13	0.41
575 +	18.64	0.39	17.71	0.32	17.97	0.39	19.01	0.37	15.04	0.48	17.82	0.43
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

According to the length of time studying English in their native countries, as presented in Table 19, respondents who had studied English fewer than one year and from three to five years, reported that all but group learning were their preferred learning styles. Students who had studied English from one to three years preferred visual, auditory, kinesthetic, and tactile as their first preferences, individual learning as their second preference, and group learning as their last preference. Students who had studied English more than five years chose visual, kinesthetic, and tactile as their first preferences, auditory and individual learning as their second preferences, and group learning as their last preference.

TABLE 19
LEARNING STYLE PREFERENCE MEANS
BY LENGTH OF TIME STUDYING ENGLISH
IN NATIVE COUNTRY

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-1 y.	18.80	0.91	18.07	0.63	19.13	0.75	19.27	0.84	15.27	0.79	19.40	0.87
1-3 y.	18.97	0.44	18.50	0.51	18.85	0.68	19.82	0.50	14.97	0.71	17.76	0.51
3-5 y.	18.59	0.57	18.43	0.51	18.76	0.48	18.84	0.43	13.95	0.58	18.97	0.57
5 y.+	18.52	0.29	17.72	0.23	18.32	0.28	19.18	0.26	14.88	0.33	17.66	0.30
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Tables 20 and 21 reveal the same results. Table 20 shows the learning style preference means by length of time living in the United States and Table 21 presents the learning style preference means by length of time studying in the United States. Every group reported the common last preference which was group learning.

TABLE 20
LEARNING STYLE PREFERENCE MEANS
BY LENGTH OF TIME LIVING
IN THE UNITED STATES

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	19.78	1.21	19.56	0.71	19.67	1.00	21.00	0.73	12.89	0.77	17.67	0.97
3-6 m.	16.40	1.38	18.10	1.51	19.00	1.28	19.90	1.01	13.10	2.14	18.50	1.33
7-11 m.	17.79	1.39	18.43	0.64	19.43	1.04	20.29	0.89	15.43	0.91	17.64	0.85
12-17 m.	18.27	0.67	17.87	0.46	17.23	0.51	18.93	0.47	15.10	0.65	17.50	0.64
18 m.-2 y.	19.42	0.92	17.25	0.73	17.08	0.60	18.25	0.91	13.67	0.85	18.50	0.90
2-3 y.	19.05	0.43	18.00	0.47	18.64	0.56	18.77	0.48	14.95	0.64	17.92	0.62
3 y.+	18.68	0.28	17.88	0.26	18.73	0.31	19.23	0.28	15.25	0.35	18.27	0.32
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Respondents who had spent time from fewer than three months to three years indicated multiple preferred learning styles (visual, auditory, kinesthetic, tactile, and individual learning). Respondents who had spent time more than three years reported visual, kinesthetic, tactile, and individual learning as their first preferences, and auditory as their second preference.

TABLE 21
LEARNING STYLE PREFERENCE MEANS
BY LENGTH OF TIME STUDYING
IN THE UNITED STATES

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	19.09	1.09	19.09	0.94	18.91	1.06	19.82	0.99	13.09	0.69	17.00	0.90
3-6 m.	17.09	1.35	17.73	1.42	18.91	1.19	20.18	0.92	13.00	1.94	19.09	1.34
7-11 m.	17.22	1.21	18.00	0.57	19.39	0.83	19.78	0.72	15.39	0.86	17.22	0.75
12-17 m.	19.00	0.55	18.29	0.47	17.35	0.52	19.10	0.42	14.45	0.52	17.90	0.58
18 m.-2 y.	18.80	1.04	17.20	0.64	18.80	1.04	19.00	1.20	14.10	1.17	18.00	1.03
2-3 y.	19.29	0.39	17.85	0.47	18.78	0.56	18.68	0.52	15.73	0.61	18.10	0.61
3 y.+	18.57	0.30	17.91	0.26	18.51	0.31	19.24	0.28	15.12	0.38	18.30	0.32
$\bar{X}$ TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

V. LEARNING STYLE PREFERENCE MEANS BY MULTIPLE VARIABLES

The results of learning style preference means compared by multiple variables are shown in Tables 22-29.

This analysis is designed to answer specifically the first and second research questions: (1) Do East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences?; and (2) What variables affect the differences in learning styles of these ESL students? The learning style preference means by countries of origin (China, Japan, Korea, and Taiwan) were compared to the means by other variables: gender; age; class; major field; TOEFL score; length of time studying English in the native country; length of time living in the United States; and length of time studying in the United States.

Learning Style Preference Controlled for Country of Origin and Gender

Table 22 summarizes the preference means by country of origin and gender. Group learning was chosen as the last preference by every gender and nationality, except female Taiwanese students in which no statistical differences of preference means were reported. Both male and female students from China and Korea, and male students

from Taiwan reported visual, auditory, kinesthetic, tactile, and individual learning as their preferred learning styles. Male students from Japan chose kinesthetic and tactile as their first preferences, and visual, auditory, and individual learning as their second preferences, while females chose kinesthetic, tactile, and individual learning as their first preferences, and visual and auditory as their second preferences.

TABLE 22
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND GENDER

GEN- DER	COUNTRY OF ORIGIN	LEARNING STYLE											
		VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
M	China	18.81	0.41	17.68	0.33	17.39	0.42	18.47	0.43	15.16	0.52	18.02	0.48
	Japan	17.00	0.63	16.95	0.62	19.68	0.62	20.32	0.58	14.50	0.65	17.86	0.53
	Korea	19.12	0.59	18.68	0.50	18.44	0.58	19.50	0.43	14.29	0.71	17.71	0.63
	Taiwan	19.37	0.81	17.00	0.71	19.11	0.73	19.58	0.64	14.16	0.90	18.74	0.87
X TOTALS		18.67	0.29	17.71	0.24	18.26	0.28	19.18	0.26	14.70	0.33	18.01	0.30
F	China	18.86	0.51	18.05	0.44	18.42	0.48	18.33	0.37	15.16	0.47	17.93	0.52
	Japan	16.85	0.57	17.30	0.52	19.85	0.85	20.70	0.73	14.15	1.02	18.00	0.74
	Korea	19.50	1.20	20.50	0.86	19.25	1.05	21.00	0.90	15.50	1.34	19.50	1.03
	Taiwan	19.07	0.67	19.07	0.57	18.93	0.58	18.87	0.53	16.73	0.94	16.93	0.74
X TOTALS		18.53	0.35	18.38	0.30	18.93	0.34	19.30	0.30	15.24	0.40	17.99	0.35
X GRAND TOTALS		18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin and Age

Learning style preference means by country of origin and age are presented in Tables 23.1-23.4.

For the Chinese (Table 23.1), multiple preferred learning styles (visual, auditory, kinesthetic, tactile, and individual learning) were indicated by students who were 25 and over. The students also reported group learning as their last preference. Chinese students under 20 chose all but individual learning as their preferred learning styles. Preference means by country of origin and age of Chinese students between 20 and 24 indicated no statistical differences.

TABLE 23.1

LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND AGE: CHINA

AGE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Under 20	17.00	1.82	18.83	1.11	19.83	1.14	20.67	1.20	18.33	0.71	15.67	1.05
20-24	17.33	2.01	17.17	0.83	18.00	1.29	17.50	1.06	12.33	2.04	18.50	1.91
25-29	19.00	0.52	17.81	0.54	18.58	0.60	18.23	0.58	16.31	0.65	17.88	0.70
30-34	18.58	0.60	17.03	0.41	17.08	0.56	18.53	0.47	13.39	0.59	18.92	0.64
35 +	19.61	0.47	18.71	0.50	17.58	0.60	18.16	0.59	16.19	0.54	17.32	0.56
$\bar{X}$ TOTALS	18.83	0.32	17.83	0.26	17.81	0.32	18.41	0.10	15.16	0.36	17.98	0.35

Preference means of Japanese students (Table 23.2) under 20 did not show any statistical differences. Students who were 20-24 chose kinesthetic, tactile, and individual learning as their first preferences, visual and auditory as their second preferences, and group learning as their last preference. Students between 25 and 29, preferred kinesthetic and tactile to visual, auditory, group, and individual learning. Students between 30-34 favored all learning styles except group learning. Students who were 35 and over selected kinesthetic and tactile as their first preferences, visual, group, and individual learning as their second preferences, and auditory as their last preference.

TABLE 23.2
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND AGE: JAPAN

AGE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Under 20	16.00	1.00	18.00	0.89	19.80	2.17	20.60	1.53	13.40	1.94	16.60	0.74
20-24	17.41	0.70	17.24	0.71	19.59	0.77	20.53	0.61	13.24	0.98	20.00	0.61
25-29	15.71	0.59	17.14	0.75	20.86	0.66	20.79	0.93	16.36	0.87	15.86	0.42
30-34	19.00	1.58	16.50	0.86	16.00	0.70	18.00	1.08	12.75	1.18	18.75	1.75
35 +	19.50	0.50	15.00	1.00	21.00	4.01	23.00	1.00	15.00	2.01	16.50	2.51
$\bar{X}$ TOTALS	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44

Korean respondents (Table 23.3) under 20 favored all learning styles except visual. No statistical differences were shown among the preference means of respondents between 20 and 24 and 35 and over. Respondents between 25 and 34 reported the same preferred learning styles (visual, auditory, kinesthetic, tactile, and individual learning), and selected group learning as their last preference.

TABLE 23.3

LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND AGE: KOREA

AGE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Under 20	13.20	1.59	20.00	1.58	18.60	1.88	18.20	1.59	14.60	3.00	16.80	2.24
20-24	19.60	1.36	21.20	1.20	20.00	1.51	20.40	0.68	16.00	1.64	19.00	1.34
25-29	20.56	0.85	19.19	0.79	18.81	0.85	20.38	0.85	14.25	1.05	17.81	0.68
30-34	18.92	0.67	18.38	0.83	18.00	1.03	19.69	0.67	13.31	1.05	19.69	0.96
35 +	20.71	0.81	18.43	0.92	18.57	1.11	20.00	0.53	16.86	1.36	16.57	2.03
$\bar{X}$ TOTALS	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.62	18.17	0.55

Taiwanese (Table 23.4) between 25 and 34 liked visual, auditory, kinesthetic, tactile, and individual learning, and disliked group learning. Preference means of the rest of the groups reported no statistical differences.

TABLE 23.4
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND AGE: TAIWAN

AGE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Under 20	16.80	1.02	18.60	0.74	17.80	0.58	17.00	0.95	15.00	1.37	17.20	1.02
20-24	19.67	1.38	19.50	0.92	19.50	1.23	19.83	1.11	16.83	1.17	17.67	1.38
25-29	20.45	0.66	17.73	0.92	19.36	0.88	19.73	0.49	15.91	1.28	18.27	0.94
30-34	19.30	1.19	16.70	1.13	19.10	1.01	19.40	1.01	13.80	1.47	18.30	1.54
35 +	17.00	2.01	18.50	0.50	18.50	2.51	20.00	1.00	15.50	3.51	17.00	1.00
$\bar{X}$ TOTALS	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.68	17.94	0.60
$\bar{X}$ GRAND TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin and Class

Table 24 shows the learning style preference means by country of origin and class.

Chinese, Japanese, and Korean graduate students, and Korean and Taiwanese undergraduate students reported the same learning style preferences. They liked all learning styles but group learning.

Taiwanese graduate students chose visual, kinesthetic, tactile, and individual learning as their first preferences, auditory as their second preference, and group learning as their last preference. Preference means by country of origin and age of Chinese undergraduate students indicated no statistical differences. Japanese undergraduate students selected kinesthetic and tactile as their first preferences, visual, auditory, and individual learning as their second preferences, and group learning as their last preference.

TABLE 24
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND CLASS

CLASS	COUNTRY OF ORIGIN	LEARNING STYLE											
		VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Grad.	C	18.96	0.29	17.74	0.28	17.60	0.34	18.26	0.30	15.04	0.36	18.16	0.37
	J	16.92	0.87	16.75	0.71	19.67	1.08	20.00	1.07	15.42	1.17	16.58	0.83
	K	20.06	0.45	18.77	0.48	18.63	0.58	20.14	0.43	14.83	0.68	18.14	0.63
	T	19.56	0.75	17.06	0.66	18.83	0.71	19.67	0.23	14.78	0.97	18.33	0.79
X TOTALS		19.11	0.23	17.82	0.22	18.13	0.26	18.97	0.24	14.99	0.29	18.06	0.28
Under.	C	17.83	1.66	18.50	0.29	19.42	0.97	19.58	1.01	16.08	1.47	16.58	1.17
	J	16.93	0.48	17.27	0.50	19.80	0.58	20.70	0.48	13.90	0.67	18.47	0.50
	K	16.55	1.48	20.36	0.98	18.73	1.05	19.09	0.97	13.91	1.51	18.27	1.16
	T	18.88	0.77	18.88	0.69	19.25	0.63	18.81	0.62	15.88	0.97	17.50	0.92
X TOTALS		17.48	0.46	18.35	0.35	19.43	0.37	19.81	0.35	14.74	0.51	17.88	0.41
X GRAND TOTALS		18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin and Major Field

Learning style preference means by country of origin and major field are presented in Tables 25.1-25.4.

Chinese students (Table 25.1) in agriculture liked visual and individual learning more than auditory, kinesthetic, tactile, and group learning. Preference means of students in business administration revealed no statistical differences. Students in education, engineering, and liberal arts favored all learning styles but group learning. Students in human ecology liked all learning styles but auditory.

TABLE 25.1
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND MAJOR FIELD: CHINA

MAJOR FIELD	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Agri.	20.17	0.74	15.58	0.57	16.33	0.77	16.33	0.92	14.42	0.90	19.75	1.03
Bus.Ad.	19.00	1.67	17.17	0.79	19.50	1.26	19.50	1.45	15.50	1.23	18.00	0.73
Educ.	17.73	0.71	17.55	1.12	17.27	1.04	16.27	0.70	13.92	0.61	17.55	1.26
Engi.	19.69	0.44	18.89	0.31	18.47	0.59	19.69	0.46	16.19	0.62	17.78	0.62
Human Eco.	14.67	3.18	15.00	1.73	20.00	0.58	18.33	1.20	16.33	1.77	15.00	2.65
Lib.Arts	18.19	0.60	17.95	0.46	17.35	0.52	18.30	0.45	14.62	0.70	17.97	0.56
$\bar{X}$ TOTALS	18.83	0.32	17.83	0.26	17.81	0.32	18.41	0.29	15.16	0.36	17.98	0.35

Japanese students (Table 25.2) in different major fields were varied in learning style preferences. Students in agriculture selected visual and tactile as the first preferences, auditory, kinesthetic, and individual learning as the second preferences, and group learning as the last preference. Students in architecture liked kinesthetic, tactile, and group learning, and chose auditory as the second preference. Individual learning was their last preference. Students in business administration favored all learning styles but group learning. No statistical differences of preference means were shown among students in communications. Students in education chose kinesthetic, tactile, and individual learning as their first, second, and last preference, respectively. Students in engineering liked all learning styles but visual. Students in human ecology also liked all learning styles but individual learning. Students in liberal arts chose kinesthetic, tactile, and individual learning as their first preferences, visual and auditory as their second preferences, and group learning as their last preference. Students in medicine chose kinesthetic, auditory, and group learning as the first, second, and last preference, respectively. Students in nursing indicated auditory and individual learning as their first preferences, visual, kinesthetic, and tactile as their second preferences, and group learning as their

last preference. Students at the English Language Institute chose kinesthetic and tactile as the first preferences, visual, auditory, and individual learning as the second preferences, and group learning as the last preference. Students in social work had kinesthetic, tactile, and auditory as their first, second, and last preference, respectively.

TABLE 25.2
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND MAJOR FIELD: JAPAN

MAJOR FIELD	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Agri.	18.00	2.01	16.00	2.01	18.00	1.00	22.00	0.00	13.50	0.50	17.50	1.50
Arch.	19.00	0.00	23.00	0.00	25.00	0.00	25.00	0.00	25.00	0.00	16.00	0.00
Bus.Ad.	17.38	1.51	17.25	1.56	19.88	1.19	21.25	0.96	14.25	1.06	18.75	0.67
Comm.	17.50	0.50	17.00	1.00	20.00	1.00	19.50	0.50	14.50	4.51	18.00	0.00
Educ.	19.00	0.00	16.00	0.00	25.00	0.00	24.00	0.00	17.00	0.00	14.00	0.00
Engi.	15.75	0.25	16.00	1.78	17.75	1.03	18.50	0.64	15.75	1.84	16.25	1.43
Human Eco.	19.00	0.58	18.00	0.58	18.00	2.31	21.33	1.77	18.33	1.46	16.00	1.00
Lib.Arts	16.91	0.83	17.00	0.47	18.18	0.81	19.27	0.80	12.91	1.15	19.91	0.81
Med.	14.00	0.00	17.00	0.00	20.00	0.00	13.00	0.00	11.00	0.00	14.00	0.00
Nurs.	15.00	0.00	17.00	0.00	15.00	0.00	15.00	0.00	11.00	0.00	17.00	0.00
Other	15.71	0.92	17.57	0.57	23.14	0.77	22.86	0.46	13.29	1.17	17.57	1.50
Soc.Work	18.00	0.00	14.00	0.00	23.00	0.00	21.00	0.00	15.00	0.00	16.00	0.00
$\bar{X}$ TOTALS	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44

Korean students (Table 25.3) in agriculture chose visual, tactile, and individual learning as their first preferences, kinesthetic as their second preference, and group learning as their last preference. Students in architecture favored kinesthetic as their first preference, auditory as their second preference, and visual and individual learning as their last preferences.

TABLE 25.3
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND MAJOR FIELD: KOREA

MAJOR FIELD	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Agri.	22.00	0.00	17.00	0.00	19.00	0.00	22.00	0.00	13.00	0.00	22.00	0.00
Arch.	16.00	0.00	20.00	0.00	21.00	0.00	18.00	0.00	17.00	0.00	16.00	0.00
Bus.Ad.	16.25	2.60	18.50	0.09	18.25	2.01	17.00	1.41	14.25	2.53	16.25	2.17
Educ.	19.00	0.00	23.00	0.00	17.00	0.00	20.00	0.00	20.00	0.00	16.00	0.00
Engi.	18.86	1.01	18.36	0.71	18.79	0.97	20.07	0.63	15.07	1.13	17.50	0.89
Human Eco.	18.33	1.14	19.83	1.44	17.67	1.43	20.17	1.43	14.50	2.28	18.83	2.06
Lib.Arts	20.08	0.69	19.15	0.90	20.38	0.87	20.85	0.70	14.92	1.18	17.69	0.98
Other	18.50	4.51	22.50	1.50	15.00	1.00	18.00	3.01	10.00	0.00	20.00	2.01
Soc.Work	22.50	2.18	19.25	2.05	16.00	1.08	19.50	1.26	13.25	2.05	22.25	1.25
$\bar{X}$ TOTALS	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55

Preference means of students in business administration and human ecology did not indicate any statistical differences. Students in engineering, liberal arts, and social work liked all learning styles but group learning. Students at the English Language Institute chose visual, auditory, tactile, and individual learning as their first preferences, kinesthetic as their second preference, and group learning as their last preference.

Preference means of Taiwanese students (Table 25.4) in agriculture, business administration, and human ecology indicated no statistical differences. Students in engineering and liberal arts favored all learning styles but group learning. Students in education chose kinesthetic, tactile, and auditory as their first, second, and last preference, respectively. Students in communications chose visual, kinesthetic, and tactile as their first preferences, individual learning as their second preference, and group learning as their last preference. Medical students selected kinesthetic and tactile as their first preferences, visual, auditory, and group learning as their second preferences, and individual learning as their last preference. Students in nursing liked all learning styles but individual learning. Students

at the English Language Institute chose tactile as their first preference, visual and kinesthetic as their second preferences, and individual learning as their last preference.

TABLE 25.4
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND MAJOR FIELD: TAIWAN

MAJOR FIELD	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
Agri.	18.50	1.50	15.00	4.01	21.00	3.01	18.50	1.50	11.50	3.51	21.00	4.01
Bus.Ad.	20.43	1.31	18.71	0.78	18.14	0.89	18.86	0.74	15.00	1.42	18.14	0.83
Comm.	21.00	0.00	17.00	0.00	21.00	0.00	21.00	0.00	11.00	0.00	19.00	0.00
Educ.	16.00	0.00	14.00	0.00	23.00	0.00	21.00	0.00	20.00	0.00	20.00	0.00
Engi.	19.00	0.92	16.90	1.13	19.20	1.07	19.80	1.10	14.50	1.33	19.30	1.29
Human Eco.	17.50	3.51	17.50	0.50	18.50	2.51	18.00	3.01	17.50	2.51	15.00	0.00
Lib.Arts	18.67	1.62	19.17	0.65	18.17	0.79	18.50	0.76	14.33	1.28	18.00	0.41
Med.	19.00	0.00	19.00	0.00	21.00	0.00	21.00	0.00	19.00	0.00	18.00	0.00
Nurs.	20.00	2.09	20.67	1.33	18.00	1.73	18.67	0.88	18.67	2.19	12.67	1.33
Other	21.00	0.00	17.00	0.00	21.00	0.00	22.00	0.00	20.00	0.00	15.00	0.00
$\bar{X}$ TOTALS	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.68	17.94	0.60
$\bar{X}$ GRAND TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin
and TOEFL Score

Tables 26.1-26.4 present learning style preference means by country of origin and TOEFL scores.

Preference means of Chinese respondents (Table 26.1) who had TOEFL scores of 350-399, and of 450-474 did not indicate any statistical differences. Respondents with the scores of 400-449 reported visual as the first preference, kinesthetic and individual learning as the second preferences, and group learning as the last preference. For the students with scores of 500-524, kinesthetic, tactile, and visual were chosen as the first, second, and last preference, respectively. The rest of the groups favored all learning styles but group learning.

TABLE 26.1
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND TOEFL SCORE: CHINA

TOEFL SCORE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
350-399	18.50	2.51	16.50	1.50	16.00	0.00	16.50	2.51	12.50	1.50	19.50	4.51
400-449	23.00	0.00	19.00	0.00	20.00	0.00	19.00	0.00	18.00	0.00	20.00	0.00
450-474	18.00	1.00	15.50	1.50	16.00	1.00	16.50	2.51	13.50	1.50	20.00	5.01
500-524	16.00	0.00	18.00	0.00	20.00	0.00	19.00	0.00	17.00	0.00	17.00	0.00
525-549	19.16	0.58	18.40	0.61	18.76	0.66	18.40	0.61	15.72	0.74	17.84	0.65
550-574	19.00	0.64	17.63	0.42	17.44	0.63	18.38	0.49	14.72	0.63	18.66	0.64
575 +	18.52	0.52	17.79	0.43	17.60	0.49	18.60	0.51	15.26	0.60	17.36	0.56
$\bar{X}$ TOTALS	18.83	0.32	17.81	0.26	17.81	0.32	18.41	0.29	15.16	0.36	17.98	0.35

Japanese students (Table 26.2) with TOEFL scores of 300-349 chose kinesthetic as their first preference, tactile as their second preference, and group learning as their last preference. Students with scores of 400-449 reported kinesthetic and tactile as their first preferences, auditory as their second, and visual as their last preference. Students who had the scores of 450-474 chose individual, kinesthetic, and group learning as their first, second, and last preference, respectively. Students with scores of 475-499 preferred kinesthetic and tactile to the other learning styles, while students with scores of 500-524 preferred auditory, kinesthetic, and tactile to the others. Students with scores of 525-549 and of 575 and over liked all learning styles but group learning. The rest, students with scores of 550-574, preferred auditory, kinesthetic, tactile, and individual learning to visual and group learning.

TABLE 26.2
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND TOEFL SCORE: JAPAN

TOEFL SCORE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
300-349	14.00	0.00	19.00	0.00	23.00	0.00	22.00	0.00	9.00	0.00	21.00	0.00
400-449	13.50	0.50	16.50	0.50	24.00	1.50	24.00	1.00	15.00	0.00	15.00	0.00
450-474	19.00	0.00	17.00	0.00	23.00	0.00	22.00	0.00	9.00	0.00	25.00	0.00
475-499	17.00	2.01	19.50	0.50	24.50	0.50	23.50	1.50	17.00	3.01	18.00	1.00
500-524	16.50	0.86	16.75	1.49	21.75	1.60	21.75	1.49	15.25	0.75	15.75	0.63
525-549	16.50	0.92	17.00	0.86	18.36	0.61	19.50	0.85	14.71	0.97	17.14	0.59
550-574	17.00	0.53	17.43	0.92	19.57	0.72	20.29	0.68	15.29	0.97	18.14	0.80
575 +	18.27	0.75	16.73	0.77	18.73	1.25	20.18	0.99	13.27	1.53	19.18	1.05
$\bar{X}$ TOTALS	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44

Korean students (Table 26.3) with TOEFL scores of 350-399 selected kinesthetic as their first preference, auditory as their second preference, and visual and individual learning as their last preferences. Students with scores of 550-574 favored visual, auditory, kinesthetic, and tactile, chose individual learning as their second preference and group learning as their last preference. Preference means of students with scores of 575 and more indicated no statistical differences, while the rest liked all learning styles but group learning.

TABLE 26.3
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND TOEFL SCORE: KOREA

TOEFL SCORE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
350-399	16.00	0.00	20.00	0.00	21.00	0.00	18.00	0.00	17.00	0.00	16.00	0.00
475-499	15.00	1.00	17.50	3.51	14.50	1.50	15.50	0.50	9.00	1.00	20.50	2.51
500-524	20.50	2.51	20.00	4.01	19.00	5.01	22.50	1.50	10.00	0.00	23.00	1.00
525-549	20.00	1.18	20.14	1.30	17.86	1.10	19.29	1.25	13.29	1.50	19.17	1.02
550-574	19.47	0.84	19.26	0.67	19.42	0.74	21.05	0.48	15.05	1.00	17.53	0.78
575 +	19.13	1.02	18.60	0.71	18.40	0.90	19.07	0.67	15.87	1.06	17.47	1.13
$\bar{X}$ TOTALS	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55

Taiwanese students (Table 26.4) in the 300-349 group reported their first preference in three learning styles (kinesthetic, tactile, and group), one learning style (visual) as their second, and two learning styles (auditory and individual) as their last preferences. Students in the 500-524 group had two first preferences (kinesthetic and tactile), three second preferences (visual, auditory, and group), and one last preference (individual). Students with scores of 525-574 favored all learning styles but group learning. Preference means of the last group (575 and over) did not indicate any statistical differences.

TABLE 26.4
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND TOEFL SCORE: TAIWAN

TOEFL SCORE	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
300-349	17.00	0.00	16.00	0.00	19.00	0.00	19.00	0.00	19.00	0.00	16.00	0.00
500-524	19.00	0.00	19.00	0.00	21.00	0.00	21.00	0.00	19.00	0.00	18.00	0.00
525-549	19.75	0.84	18.63	0.84	19.19	0.66	18.81	0.46	15.00	1.11	17.69	1.01
550-574	18.90	0.94	17.30	0.77	19.10	0.96	19.60	0.79	15.40	1.18	17.60	1.03
575 +	18.83	1.42	17.17	1.04	18.17	1.35	19.67	1.74	14.67	1.54	19.50	1.08
$\bar{X}$ TOTALS	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.68	17.94	0.60
$\bar{X}$ GRAND TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin
and Length of Time Studying English in Native Country

Learning style preference means by country of origin and length of time studying English in a native country are presented in Tables 27.1-27.4.

Chinese respondents (Table 27.1) who had studied English fewer than one year reported three first preferences (visual, tactile, and individual learning), two second preferences (auditory and kinesthetic), and one last preference (group learning). The others liked all learning styles but group learning.

TABLE 27.1
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND LENGTH OF TIME STUDYING ENGLISH
IN NATIVE COUNTRY: CHINA

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-1 y.	21.33	0.49	17.83	0.79	17.17	0.87	18.17	1.47	14.50	0.84	20.00	1.48
1-3 y.	19.95	0.44	18.36	0.63	18.32	0.91	20.00	0.67	16.23	0.89	18.32	0.68
3-5 y.	18.74	0.77	18.16	0.75	18.68	0.67	18.05	0.57	15.37	0.68	18.58	0.78
5 y.+	18.17	0.47	17.52	0.32	17.40	0.40	17.95	0.38	14.76	0.50	17.45	0.50
$\bar{X}$ TOTALS	18.83	0.32	17.83	0.26	17.81	0.32	18.41	0.29	15.16	0.36	17.98	0.35

For the Japanese students (Table 27.2) of five years and over of English study, kinesthetic and tactile were chosen as their first preferences, visual, auditory, and individual learning were their second preferences, and group learning was their last preference. The rest liked all learning styles but group learning.

TABLE 27.2
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND LENGTH OF TIME STUDYING ENGLISH
IN NATIVE COUNTRY: JAPAN

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-1 y.	18.00	2.01	15.50	1.50	19.50	3.51	20.50	1.50	10.00	1.00	22.50	2.51
1-3 y.	16.17	0.70	16.83	1.01	20.33	1.86	19.67	1.43	12.83	1.78	17.50	0.99
3-5 y.	16.00	1.48	18.40	0.92	18.80	1.35	20.40	1.36	12.60	1.57	19.80	1.65
5 y.+	17.17	0.53	17.07	0.52	19.83	0.59	20.69	0.55	15.24	0.66	17.38	0.46
$\bar{x}$ TOTALS	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44

Korean students (Table 27.3) who had studied English from one to three years favored all learning styles except individual learning, while the others selected group learning as their last preference.

TABLE 27.3
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND LENGTH OF TIME STUDYING ENGLISH
IN NATIVE COUNTRY: KOREA

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-1 y.	17.25	2.62	20.50	1.26	21.25	0.48	20.00	1.08	17.50	0.86	18.50	1.32
1-3 y.	17.00	2.01	19.50	3.51	18.50	1.50	20.00	0.00	18.50	1.50	16.00	0.00
3-5 y.	17.80	1.65	20.40	1.36	18.40	1.72	20.20	1.46	11.00	0.63	20.00	1.14
5 y.+	19.77	0.58	18.80	0.51	18.40	0.60	19.83	0.48	14.57	0.75	18.00	0.68
$\bar{X}$ TOTALS	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55

Preference means of Taiwanese students (Table 27.4) who had studied English fewer than one year in their country showed no statistical differences. Students of one to three years of English study chose all preferred learning styles except individual learning, while students in the other groups favored all learning styles but group learning.

TABLE 27.4
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN AND LENGTH OF TIME STUDYING ENGLISH
IN NATIVE COUNTRY: TAIWAN

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-1 y.	16.33	1.20	17.00	0.58	20.00	2.09	19.67	2.91	17.33	1.20	17.33	1.85
1-3 y.	18.75	1.70	21.25	0.25	19.75	0.63	19.00	0.81	18.00	1.15	16.00	1.35
3-5 y.	20.38	1.13	17.88	1.19	19.13	0.97	18.88	0.72	13.25	1.55	18.75	1.49
5 y.+	19.32	0.70	17.37	0.65	18.68	0.69	19.42	0.58	15.26	0.91	18.11	0.78
$\bar{X}$ TOTALS	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.68	17.94	0.60
$\bar{X}$ GRAND TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin
and Length of Time Living in the United States

Tables 28.1-28.4 reveal learning style preference means by country of origin and length of time living in the United States.

Chinese students (Table 28.1) who lived in the United States fewer than three months rated tactile as their first preference, auditory and kinesthetic as their second preferences, and group learning as their last preference. Students who were in the United States between three to six months chose individual learning as their first preference and also had two second preferences (visual and auditory). Group learning was the last preference for this group. Preference means of the next group (having lived in the United States seven to 11 months) did not indicate any statistical differences. The rest liked all learning styles but group learning.

TABLE 28.1
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME LIVING IN THE UNITED STATES: CHINA

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	16.00	0.00	19.00	0.00	19.00	0.00	20.00	0.00	14.00	0.00	11.00	0.00
3-6 m.	17.00	0.00	17.00	0.00	14.00	0.00	16.00	0.00	5.00	0.00	20.00	0.00
7-11 m.	15.50	3.97	19.00	1.35	17.75	1.11	16.50	1.32	17.50	2.21	15.75	1.97
12-17 m.	17.47	1.12	17.27	0.59	17.33	0.61	18.93	0.69	15.47	0.93	17.13	0.95
18 m.-2 y.	19.71	1.06	18.14	1.06	17.00	0.62	17.71	0.95	14.00	0.69	18.86	1.34
2-3 y.	19.74	0.50	17.87	0.53	17.74	0.75	18.39	0.58	15.35	0.75	17.87	0.91
3 y.+	19.04	0.36	17.83	0.40	18.13	0.49	18.52	0.45	15.19	0.50	18.41	0.43
$\bar{X}$ TOTALS	18.83	0.32	17.83	0.26	17.81	0.32	18.41	0.29	15.16	0.36	17.98	0.35

Japanese students (Table 28.2) who had up to six months of U.S. residency reported the same preferences. They liked all learning styles but group learning. Students who had lived in the United States for seven to 11 months preferred kinesthetic and tactile to the other learning styles. Preference means of the next groups (having lived in the United States 12-17 months and two to three years) reported no statistical differences. Students having 18 months to two years in the United States chose individual learning as the first preference, tactile as the second, and group learning as the last preference. The rest chose two first preferences (kinesthetic and tactile), three second preferences (visual, auditory, and individual learning), and one last preference (group learning).

TABLE 28.2
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME LIVING IN THE UNITED STATES: JAPAN

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	16.00	2.01	17.50	1.50	21.00	2.01	20.50	1.50	9.50	0.50	19.50	1.50
3-6 m.	17.50	1.78	17.83	2.21	21.00	1.46	21.83	0.95	13.83	2.34	19.83	1.35
7-11 m.	15.40	1.03	17.40	0.74	23.20	1.11	23.20	0.58	15.00	0.54	15.40	0.51
12-17 m.	16.67	1.85	18.33	0.88	17.67	0.33	20.00	1.16	16.67	0.66	18.33	2.03
18 m.-2 y.	16.00	0.00	14.00	0.00	16.00	0.00	19.00	0.00	11.00	0.00	20.00	0.00
2-3 y.	17.40	1.07	16.80	0.73	18.80	1.53	17.60	1.69	13.60	2.03	17.80	1.28
3 y.+	17.20	0.56	16.85	0.47	19.15	0.22	20.30	0.65	14.80	0.81	17.70	0.64
$\bar{X}$ TOTALS	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44

Korean students (Table 28.3) who lived in the United States fewer than three months chose four first preferences (visual, auditory, kinesthetic, and tactile). They chose individual learning as their second preference, and group learning as their last preference. Preference means of students of three to 11 months of U.S. residency did not reveal any statistical differences. Students of 18 months to two years of U.S. residency indicated four first preferences (visual, kinesthetic, tactile, and individual learning), one second preference (auditory), and one last preference (group learning). Students in the groups of 12 to 17 months and over three years of U.S. residency liked all learning styles but group learning, while the rest liked all learning styles but individual learning.

TABLE 28.3
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME LIVING IN THE UNITED STATES: KOREA

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	22.40	0.92	20.60	0.92	20.00	1.51	22.00	0.95	14.20	0.66	17.80	0.58
3-6 m.	14.00	2.89	19.00	3.06	16.67	1.77	17.33	1.20	14.33	5.37	15.33	3.18
7-11 m.	21.67	0.88	19.67	2.19	18.33	2.33	21.67	0.33	14.33	2.96	20.00	2.00
12-17 m.	20.22	0.81	18.56	1.13	16.89	1.43	19.00	0.85	14.56	1.45	17.44	1.36
18 m.-2 y.	22.00	2.01	15.50	0.50	16.50	2.51	19.50	4.51	10.00	0.00	20.00	0.00
2-3 y.	16.60	1.20	20.40	1.20	21.00	1.48	20.00	1.64	16.20	2.35	16.60	0.40
3 y.+	18.74	0.80	19.05	0.63	19.11	0.63	19.89	0.55	14.89	0.88	19.00	0.98
$\bar{x}$ TOTALS	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55

Taiwanese students (Table 28.4) who had fewer than three months of U.S. residency chose individual learning, auditory, and group learning as their first, second, and last preference, respectively. The next group (having lived in the United States seven to 11 months) reported three first preferences (visual, tactile, and individual learning), one second preference (auditory), and one last preference (kinesthetic). Preference means of students with 18 months to two years of U.S. residency indicated no statistical differences. The other groups liked all learning styles but group learning.

TABLE 28.4
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME LIVING IN THE UNITED STATES: TAIWAN

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	18.00	0.00	19.00	0.00	16.00	0.00	18.00	0.00	12.00	0.00	20.00	0.00
7-11 m.	22.50	0.50	18.00	1.00	15.00	0.00	18.50	1.50	14.00	2.01	16.50	2.51
12-17 m.	18.00	1.16	18.33	0.66	17.33	0.33	17.67	1.46	13.33	0.88	18.67	0.88
18 m.-2 y.	17.50	3.51	17.50	0.50	18.50	2.51	18.50	3.51	17.50	2.51	15.00	0.00
2-3 y.	19.83	1.14	17.50	1.89	20.00	1.03	21.17	0.98	13.50	1.86	19.33	1.76
3 y.+	19.15	0.75	17.95	0.65	19.60	0.62	19.45	0.56	16.20	0.92	17.75	0.81
TOTALS	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.48	17.94	0.60
GRAND TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

Learning Style Preference Controlled for Country of Origin
and Length of Time Studying in the United States

Learning style preference means by country of origin and length of time studying in the United States are shown in Tables 29.1-29.4.

Preference means of Chinese students (Table 29.1) who studied here fewer than three months and seven to 11 months showed no statistical differences. Students of three to six months chose four first preferences (visual, auditory, tactile, and individual learning), one second preference (kinesthetic), and one last preference (group learning). Students of 18 months to two years chose individual learning as their first preference, auditory as their second preference, and tactile and group learning as their last preferences. The rest liked all learning styles except group learning.

TABLE 29.1
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME STUDYING IN THE UNITED STATES: CHINA

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	16.00	0.58	17.67	2.96	16.67	2.33	16.33	1.85	14.00	1.16	13.00	1.00
3-6 m.	18.00	1.00	15.50	1.50	14.50	0.50	17.50	1.50	7.50	2.51	22.50	2.51
7-11 m.	16.14	2.64	17.29	0.89	19.00	0.79	18.14	0.91	16.86	1.64	15.86	1.64
12-17 m.	18.75	0.85	18.13	0.67	17.38	0.62	19.06	0.57	14.50	0.53	17.69	0.80
18 m.-2 y.	16.00	0.00	18.00	0.00	16.00	0.00	14.00	0.00	14.00	0.00	24.00	0.00
2-3 y.	19.62	0.43	17.86	0.49	18.14	0.67	18.24	0.61	15.69	0.59	18.28	0.72
3 y.+	19.04	0.43	17.89	0.40	17.83	0.51	18.60	0.46	15.23	0.60	18.21	0.46
$\bar{X}$ TOTALS	18.83	0.32	17.83	0.26	17.81	0.32	18.41	0.29	15.16	0.36	17.98	0.35

Japanese students (Table 29.2) of fewer than six months favored all learning styles but group learning, while students of 12 to 17 months favored all learning styles but kinesthetic. Students who studied here seven to 11 months preferred kinesthetic and tactile to the other learning styles. Students of more than three years preferred kinesthetic, tactile, and individual learning to the other styles. Preference means of the rest of the groups indicated no statistical differences.

TABLE 29.2
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME STUDYING IN THE UNITED STATES: JAPAN

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	16.00	2.01	17.50	1.50	21.00	2.01	20.50	1.50	9.50	0.50	19.50	1.50
3-6 m.	17.60	2.18	18.00	2.70	22.00	1.30	22.60	0.68	14.40	2.78	19.40	1.57
7-11 m.	15.83	0.95	17.33	0.62	22.33	1.26	22.33	0.99	15.17	0.48	15.33	0.42
12-17 m.	16.00	3.01	19.00	1.00	17.50	0.50	21.00	1.00	17.00	1.00	20.00	2.01
18 m.-2 y.	17.00	1.00	16.00	1.16	20.33	2.61	19.67	2.33	12.67	2.19	18.00	2.00
2-3 y.	17.75	1.31	16.50	0.86	18.50	1.93	18.00	2.12	14.50	2.36	17.25	1.49
3 y.+	17.10	0.55	16.90	0.47	18.70	0.67	20.00	0.63	14.50	0.82	18.10	0.64
$\bar{X}$ TOTALS	16.93	0.42	17.12	0.40	19.76	0.51	20.50	0.46	14.33	0.59	17.93	0.44

Korean students (Table 29.3) of 12 months to two years and more than three years liked all learning styles but group learning, while preference means of students of three to 11 months did not show any statistical differences. Students who studied in the United States fewer than three months reported four first preferences (visual, auditory, kinesthetic, and tactile), one second preference (individual learning), and one last preference (group learning). Students of two to three years preferred auditory, kinesthetic, tactile, and group learning to visual and individual learning.

TABLE 29.3
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME STUDYING IN THE UNITED STATES: KOREA

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	22.40	0.92	20.60	0.92	20.00	1.51	22.00	0.95	14.20	0.66	17.80	0.58
3-6 m.	16.00	2.86	18.50	2.21	17.25	1.37	18.50	1.44	14.00	3.81	17.00	2.80
7-11 m.	19.00	2.65	21.00	1.73	17.33	2.40	19.33	2.19	13.33	3.33	18.67	1.77
12-17 m.	20.22	0.81	18.56	1.13	16.89	1.43	19.00	0.85	14.56	1.45	17.44	1.36
18 m.-2 y.	21.00	1.53	16.67	1.20	17.67	1.85	19.67	2.61	12.67	2.67	19.00	1.00
2-3 y.	17.25	1.31	20.25	1.55	22.25	1.03	21.25	1.37	17.75	2.28	16.25	0.25
3 y.+	18.72	0.84	19.06	0.66	19.06	0.66	19.89	0.58	14.72	0.91	19.11	1.03
$\bar{X}$ TOTALS	19.22	0.53	19.15	0.44	18.65	0.50	19.89	0.40	14.61	0.63	18.17	0.55

Taiwanese students (Table 29.4) of 12 to 17 months and more than three years favored all learning styles but group learning. Preference means of students of 18 months to three years did not indicate any statistical differences. Students who studied here fewer than three months chose individual learning as the first preference, auditory as the second preference, and group learning as the last preference. Students of seven to 11 months preferred visual, auditory, tactile, and individual learning to kinesthetic and group learning.

TABLE 29.4
LEARNING STYLE PREFERENCE MEANS
BY COUNTRY OF ORIGIN
AND LENGTH OF TIME STUDYING IN THE UNITED STATES: TAIWAN

LENGTH OF TIME	LEARNING STYLE											
	VIS.	S.E.	AUD.	S.E.	KIN.	S.E.	TAC.	S.E.	GRO.	S.E.	IND.	S.E.
0-3 m.	18.00	0.00	19.00	0.00	16.00	0.00	18.00	0.00	12.00	0.00	20.00	0.00
7-11 m.	22.50	0.50	18.00	1.41	15.00	0.00	18.50	1.50	14.00	2.01	16.50	2.51
12-17 m.	18.75	1.11	18.00	0.57	18.25	0.94	18.50	1.32	12.75	0.85	18.75	0.63
18 m.-2 y.	19.33	2.73	18.67	1.20	19.33	1.67	19.33	2.19	17.00	1.53	15.00	0.00
2-3 y.	20.50	1.32	16.75	2.78	20.25	1.49	20.00	1.47	15.25	3.68	19.50	3.33
3 y.+	18.80	0.74	17.95	0.65	19.45	0.62	19.40	0.56	15.85	0.85	17.95	0.73
Σ TOTALS	19.24	0.53	17.91	0.50	19.03	0.47	19.26	0.43	15.29	0.68	17.94	0.60
Σ GRAND TOTALS	18.62	0.22	17.98	0.19	18.52	0.22	19.22	0.20	14.92	0.26	18.00	0.23

VI. SELF-PERCEIVED CHANGES OF LEARNING STYLES

Answers from Part III of the questionnaire were categorized and summarized to report whether the ESL students perceived that their learning styles had changed in response to their academic and non-academic experiences in the United States.

Table 30 gives the summary of numbers and percentage of responses, according to country of origin, collected from Part III of the questionnaire.

Of the 227 respondents in this study, 140 (61.68%) indicated that they had made no changes in their learning/study preferences. A total of 87 (38.32%) reported that they had made changes since coming to the United States.

TABLE 30

SELF-PERCEIVED CHANGES IN RESPONDENTS' LEARNING/STUDY PREFERENCE
BY COUNTRY OF ORIGIN AND GENDER

ANSWER	GENDER	COUNTRY OF ORIGIN				TOTAL	
		CHINA (N = 105)	JAPAN (N = 42)	KOREA (N = 46)	TAIWAN (N = 34)	N	%
Yes	Male	16	12	10	6	44	19.38
	Female	17	13	4	9	43	18.94
TOTAL		33 (31.43%)	25 (59.52%)	14 (30.43%)	15 (44.21%)	87	38.32
No	Male	46	10	24	13	93	40.97
	Female	26	7	8	6	47	20.71
TOTAL		72 (68.57%)	17 (40.48%)	32 (69.57%)	19 (55.88%)	140	61.68

Thirty-three (31.43%) Chinese respondents reported changes in their learning/study preference. Their changes are summarized in Table 31.

TABLE 31
REPORT OF SELF-PERCEIVED CHANGES IN LEARNING STYLES:
CHINA

COMMENTS	N
Enjoy and learn from experiments and projects, group and individual	9
Try to understand and apply ideas, rather than memorizing facts	6
Try to speak, use, and understand English more	6
Yes -- with no further details	6
Study alone to increase understanding of lectures/class presentations	5
Study together with other students	5
Read more to increase understanding of class presentations	5
Become more independent in choosing and planning studies and projects	5
Spend more time in reading, reviewing, and practicing	5
Try to participate in class discussion	3
Feel freer to ask questions and to ask professors for help	2
Have changed attitudes and adjusted to American culture and class requirements	2
Study less because competition is less in the United States	1

Note: Discrepancies between the totals for each comment and the total number of respondents for self-perceived changes of learning styles are due to the fact that some respondents indicated more than one change.

Twenty-five (59.52%) Japanese respondents reported changes in their learning/study preferences. Their changes are summarized in Table 32.

TABLE 32
REPORT OF SELF-PERCEIVED CHANGES IN LEARNING STYLES:
JAPAN

COMMENTS	N
Take more time to study textbook and related class readings and to prepare outside of class	6
Yes -- with no specifics given	5
Listen more carefully in class in order to understand in English	5
Try to understand ideas rather than just memorize; summarize important concepts	3
Speak more and express own opinion more freely in class	3
Make more decisions, feel more free and independent	3
Use more group projects and study	2
Learned to ask instructor for help	1

Note: Discrepancies between the totals for each comment and the total number of respondents for self-perceived changes of learning styles are due to the fact that some respondents indicated more than one change.

Fourteen (30.43%) Korean respondents reported changes in their learning/study preferences. Their changes are summarized in Table 33.

TABLE 33
REPORT OF SELF-PERCEIVED CHANGES IN LEARNING STYLES:
KOREA

COMMENTS	N
Listen more carefully in class because of difficulty in understanding lectures in English	6
Spend more time in reading, previewing, and reviewing class presentations	4
Participate more in group learning and classroom discussions	4
Try to understand and apply ideas rather than just memorize	4
Use preview and review of class presentations to improve understanding	4
Take more notes in class because ideas are hard to remember in English	1

Note: Discrepancies between the totals for each comment and the total number of respondents for self-perceived changes of learning styles are due to the fact that some respondents indicated more than one change.

Fifteen (44.12%) Taiwanese respondents reported changes in their learning/study preferences. Their changes are summarized in Table 34.

TABLE 34
REPORT OF SELF-PERCEIVED CHANGES IN LEARNING STYLES:
TAIWAN

COMMENTS	N
Learn more from reading than from listening in class because of difficulties in understanding English	3
Read to preview and review class presentations	3
Yes -- with no specifics given	2
Take complete lecture notes	2
Study alone more often because of difficulties in understanding spoken English	2
Study in groups more often	2
Use more experiments, charts, graphs, maps, empirical evidence to increase understanding of concepts	2

Note: Discrepancies between the totals for each comment and the total number of respondents for self-perceived changes of learning styles are due to the fact that some respondents indicated more than one change.

The most common changes reported by the total of 87 respondents who checked "yes" in Part III of this study are summarized in Table 35.

It should be noted that although the ESL respondents reported a change in learning style(s) after U.S. residence, it may be that they actually experienced, rather, a change in learning strategy or strategies.

TABLE 35
REPORT OF SELF-PERCEIVED CHANGES IN LEARNING STYLES:
OVERALL

COMMENTS	N
Read more in textbook and related materials to preview and review class presentations	20
Speak and use English more often; participate more freely in class discussions	16
Participate in more group projects and experiments	15
Take more time to study and prepare because of English language difficulties	15
Emphasize understanding and applying ideas rather than memorization	15
Study together more often	15
Listen more carefully and take notes in class to increase understanding	14
Yes -- with no specifics indicated	13
Become more independent; make more decisions about courses, projects, and studies	8
Study alone more often because of English language difficulties	7
Feel freer to ask questions and to ask instructor for help	3

Note: Discrepancies between the totals for each comment and the total number of respondents for self-perceived changes of learning styles are due to the fact that some respondents indicated more than one change.

VII. DISCUSSION

The analysis of data was presented in this chapter for the purpose of responding to the three research questions: (1) Do East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences?; (2) What variables affect the difference in learning styles of these ESL students?; and (3) Do these ESL students perceive any changes in their learning styles since they came to the United States?

Country of Origin

According to individual responses, East Asian ESL students as a whole, appeared to choose visual and kinesthetic as their first preferences, tactile as their second preference, and group learning as their last preference.

The first preferences were different for the various national groups. Chinese and Taiwanese students chose the visual learning style; Korean students chose both visual and tactile; and Japanese students chose the kinesthetic learning style as their major preference.

Chinese and Japanese students chose the tactile learning style as their second preference, while Korean and Taiwanese chose the auditory learning style as their

second preference.

The four nationalities were unanimous in choosing group learning as their last learning style preference.

According to learning style preference means, East Asian ESL students as a whole reported three first preferences (visual, kinesthetic, and tactile), two second preferences (auditory and individual learning), and one last preference (group learning).

By country of origin, learning style preference means revealed an interesting phenomenon that Chinese, Korean, and Taiwanese students did indicate the common multiple first preferences (visual, auditory, kinesthetic, tactile, and individual learning) while Japanese students reported only two distinctive first preferences (kinesthetic and tactile) and three second preferences (visual, auditory, and individual learning). However, all four nationalities scored group learning the lowest which made it clear last learning style preference for them.

Languages

There were three native languages (Chinese, Japanese, and Korean) involved in this study. Both Chinese and Taiwanese respondents indicated that they shared the same native language, Chinese.

Even though Chinese and Korean are two different East Asian languages, Chinese-speaking students and Korean-speaking students preferred the same multiple learning styles, including kinesthetic and tactile which Japanese-speaking students chose as their first preferences as well. At this point, language background did not seem to affect learning style preferences of these ESL students.

Gender

In this study, almost two-thirds (60.35%) of all respondents were males, and the rest (39.65%) were females.

As a whole, both male and female East Asian ESL students appeared to have the same preferences for first and second with a slightly different opinion concerning auditory learning style. While males chose auditory as one of their second preferences, females chose it as one of their first preferences.

Results from the means by country of origin and gender (Table 22) revealed no statistical differences between genders of Chinese and Korean respondents. There appeared to be a slight statistical difference between genders of Japanese and Taiwanese respondents. However, the difference did not seem to affect the learning style preferences of these groups.

Age

More than one half (57.27%) of all respondents were between 25 and 34 years old. The learning style preference means by this variable did not result in statistical differences, except that the youngest students (under 20) of all four nationalities gave their lowest ratings to visual and group learning. Young Chinese students (under 20) distinctively tended to prefer studying in groups while older students tended to prefer individual learning.

A difference of preference means between younger and older Korean students also occurred. Young students (under 20) tended to dislike the visual learning style while older students preferred it and gave this learning style high ratings.

Class

More than two-thirds (69.60%) of all respondents were graduates. The rest (30.40%) were undergraduates (Table 6).

The results of class of students paralleled those of age. Graduate students gave higher ratings to visual learning, while undergraduate students gave higher ratings to kinesthetic and tactile learning styles.

Major Field

There were diverse patterns in learning style preferences according to major fields. An interesting phenomenon was that some professional fields such as architecture and nursing gave high rates to group learning and rated individual learning as their last preference while the others did the opposite (Table 17).

Students in most major fields reported multiple first and/or second preferences and either group learning or individual learning as their last preference.

Beside the group and the individual learning, auditory was not favored by students in some major fields such as Chinese students in agriculture and human ecology, Japanese students in social work, and Taiwanese students in education.

TOEFL Score

The average TOEFL score of all respondents was between 550 and 574. In general, the preference means by TOEFL score of the East Asian ESL students as a whole did not indicate any statistical differences. However, by country of origin, there was an interesting phenomenon which was that students with the lower TOEFL scores gave lower rates to visual learning: (1) Chinese students with scores of 500-524; (2) Japanese students with scores of 300-524;

(3) Korean students with scores of 350-399; (4) Taiwanese students with scores of 300-524.

This finding could probably be related to the findings from age and class variables which indicated that younger and/or undergraduate students tended to favor visual less than other learning styles. Logically, young (or undergraduate) international students come to the United States with fewer experiences in English study and/or TOEFL than older students. Apparently, some of these young students were still struggling with English language and TOEFL, which might have affected their low TOEFL scores.

Kaplan (1984) states:

Most of the individuals who wish to study in the United States have had neither the leisure nor the financial resources to acquire high-level proficiency in English prior to the point of application (p.247).

Therefore, there was no surprise that the findings from age, class, and TOEFL score variables were similar.

Length of Time Studying English in Native Country

Preference means of the East Asian ESL students as a whole did not reveal any statistical differences according to the length of time English study in native countries.

Most of the respondents reported multiple first preferences and one last preference, group learning. Only

Korean and Taiwanese students who had one to three years of English study in their countries gave individual learning the lowest rates.

Length of Time Living and Studying in the United States

For these East Asian ESL students as a total group, the length of time living and studying in the United States affected the learning style preferences to some extent.

The results (Tables 20 and 21) revealed that the respondents seemed to lose their preference for auditory learning as they lived and studied for longer periods (three years and over) in the United States.

Some nationalities indicated changes in their learning styles. The longer Chinese students lived and studied in this country, the more learning styles they adopted. Japanese became less visual when they lived and studied in the United States longer than six months. Taiwanese students seemed to gain their preference for auditory and kinesthetic learning styles as they lived and studied for longer periods (11 months and over) in this country.

Visual Learning Style

Three nationalities (Chinese, Korean, and Taiwanese) indicated visual learning as one of their first preferences (Table 11.1 and Table 14). The Japanese were the only

national group who rated visual learning style somewhat negatively.

According to the number of individual respondents (Table 11.1), Chinese students strongly indicated visual learning as their most preferred learning style. It was also ranked as their third second learning preference next to tactile and auditory. Korean students chose visual together with tactile as their first preferences. Taiwanese preferred visual as their first preference, as well. Only two Japanese students chose visual learning as their first preference, but 10 students (23.81%, almost one-fourth of the total Japanese respondents) selected it as their last preference.

According to the learning style preference means (Table 14), Chinese, Korean, and Taiwanese students still showed their first preference as visual, while it was the second learning preference of Japanese students.

Of all language backgrounds (Table 15), Chinese-speaking students preferred visual learning as their first preference, which fits Reid's findings (1987). Korean-speaking students also chose it as their first preference. Japanese-speaking students rated visual learning somewhat low. Visual learning was not favored by some young students, undergraduates, and students with low TOEFL scores.

Auditory Learning Style

None of the four nationalities chose auditory learning as a first preference. It was selected as a second preference by Korean and Taiwanese students according to the number of individual respondents. It is interesting that both Korean and Taiwanese students chose visual learning as their first preference and auditory learning as their second preference. It appears that students who chose visual as their learning style also utilized auditory learning as a preferred learning style.

Kinesthetic Learning Style

According to the total number of individual responses (Table 11.2), this learning style was ranked the first preference, together with visual learning (66 respondents each). And according to the preference means (Table 14), kinesthetic was also rated one of the multiple first preferences.

Japanese seemed to favor the kinesthetic learning style very much. It was chosen as the first learning preference by 19 of 42 Japanese respondents, and the preference means (19.76, Table 14) ranked it as one of their first preferences along with tactile learning.

The results agreed with Reid's study that "most ESL students strongly preferred kinesthetic learning as a major

learning style" (Reid, 1987, p.97), but disagreed that Japanese speakers were less kinesthetic than Chinese and Korean speakers. The data in this study indicated that Japanese speakers were as kinesthetic as the other two language groups.

Tactile Learning Style

According to the preference means (Table 14), tactile was one of the first preferences among the total subjects in this study, especially for the Japanese.

Tactile learning was ranked the most preferred second learning style by total individual responses, 72 (Table 11.2). Particularly, it was chosen as a second preference by Chinese and Japanese individual respondents. It was the first preference, together with visual learning for Korean respondents.

The strong preference for this learning style by East Asian ESL students as both first and/or second preference, may indicate that instructional designs, teaching styles, and counseling should be evaluated, adapted, and adjusted to respond to the preference needs of this particular group of international students in the United States.

Group Learning Style

The group learning style seemed to become a special

case in this study after the findings.

Every country of origin and language background reported group learning as their last learning style preference (Table 14 and Table 15). Data from individual respondents showed the same result (Table 11.1 and Table 11.2).

Surprisingly, Chinese students in human ecology, Japanese students in architecture and human ecology, and Taiwanese students in nursing rated group learning as one of their first preferences, as did Taiwanese students with TOEFL scores between 300-349. Taiwanese students in medicine selected this learning style as their second preference.

Based on the results of this study, it is possible that their East Asian culture and previous educational experiences affect these students' last preference for group learning.

Some recent research has been focused on group learning. Culture seems to play a big role in ESL students' reaction to this learning style. Sears (1990) indicated that, "Children from many cultures function with different, non-analytical cognitive styles, or their culture may have taught them to value the achievement of the group rather than the individual (p.138)."

Bell and Burnaby (1988) gave some suggestions according to non-cooperative reaction of ESL students to group learning:

If they feel unhappy working in small groups and prefer to work alone, give them that choice. If students are very ill at ease with group discussions, for the first few weeks they could work individually on task (p.22).

Individual Learning Style

Even though none of the four nationalities as a whole chose individual learning as either their first, second, or last preference, the number of individual respondents for this learning style was very comparable to that of other learning styles.

Chinese students (29) chose it as the second first preference, next to visual (37) (Table 11.1), and 25 chose it as their next to least preferred learning style preference, with their least preferred being group learning (58).

Both Korean and Taiwanese students also selected individual learning as their next to least preferred learning style preference. Interestingly, the number of Taiwanese students who rated group learning as their last preference (17) and who rated individual learning as their last preference (12) was similar. There is no clear pattern for this group of respondents in their least preferred

learning style preferences since these two learning styles are totally opposite of each other.

VIII. CONCLUSION

The following conclusions are made about the three hypotheses which were considered in this study.

Hypothesis # 1: East Asian ESL students from different language/cultural backgrounds differ from one another in their learning style preferences.

For the entire group of East Asian ESL students, individual choices of the major learning style preferences were quite diverse: visual, 66; kinesthetic, 66; tactile 65; individual, 58; auditory, 35; and group, 13 (Table 11.2).

In summary, group learning was ranked very negatively. Chinese, Korean, and Taiwanese students preferred visual, auditory, kinesthetic, tactile, and individual learning styles as their first preferences. Japanese students, however, gave their most highly positive ratings to kinesthetic and tactile learning styles as their first preferences. This indicates that Japanese students, as

a group, do differ in their learning style preferences only on one learning style, visual, when compared to groups of Chinese, Korean, and Taiwanese students. Therefore, Hypothesis # 1 is only in part supported by the results of this study.

Hypothesis # 2: Variables such as gender, age, level of education, field of study, TOEFL score, length of time studying English, and length of time in the United States affect the differences in learning styles of these ESL students.

Older students (30 and over) and graduate students tended to prefer the visual learning style. Younger students (29 and below) and undergraduate students preferred tactile and kinesthetic learning styles (Tables 13 and 16).

Students in some professional fields such as architecture, nursing, and human ecology gave higher ratings to the group learning style. Students in several fields reported multiple first and/or second learning style preferences (Table 17).

Students with higher TOEFL scores (525 and over) gave higher ratings to the visual learning style than all those with scores below 525.

Length of time living and studying in the United States revealed some patterns of changes in learning style preferences of the respondents.

Other variables such as gender, language, and length of time studying English in native countries provided no clear patterns of differences.

Age, class standing, field of study, TOEFL scores, and length of time living and studying in the United States do, however, may appear to affect students' choices of learning styles. Therefore, Hypothesis # 2 is supported by the results of this study.

Hypothesis # 3: These ESL students perceive some changes in their learning styles since they came to the United States.

Hypothesis # 3 is partially supported by the results of this study. Of the 227 respondents, 87 (38.32%) indicated that they had made changes in their learning styles since coming to the United States. (The most common changes are summarized in Table 35.)

The respondents' difficulty in speaking, reading, and listening to English was frequently mentioned. Their difficulty in using this second language was cited as the underlying cause for many of their changes in learning/study preferences.

CHAPTER V

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

I. SUMMARY

The main purpose of this study was to investigate the learning style preferences of East Asian ESL students at The University of Tennessee, Knoxville, Tennessee. Specifically, this research investigation attempted to:

- (a) identify ethnographic variables that affect the differences in learning styles of these ESL students; and
- (b) identify self-perceived changes in learning styles of these ESL students since they came to the United States.

The following three hypotheses were considered in this study.

1. East Asian ESL students from different language/cultural background differ from one another in their learning style preferences.
2. Variables such as gender, age, level of education, field of study, TOEFL score, length of time studying English, length of time in the United States affect the differences in learning styles of these ESL students.

3. These ESL students perceive some changes in their learning styles since they came to the United States.

The subjects for this study were drawn from The University of Tennessee, Knoxville, Tennessee. The subjects were East Asian ESL students from China, Japan, Korea, and Taiwan who were currently enrolled at The University of Tennessee, Knoxville.

The self-reporting "Perceptual Learning Style Preference Questionnaire", developed from Professor Joy M. Reid's (1984) instrument, was sent to 314 East Asian ESL students: 140 Chinese, 54 Japanese, 72 Korean, and 48 Taiwanese. Final compilation of the responses revealed a return of 227 (72.29%) completed questionnaires: 105 Chinese, 42 Japanese, 46 Korean, and 34 Taiwanese.

Answers from Part I and Part II were entered into the Excel Version 4.0 program on the Macintosh. The individual ethnographic variables and the responses from the learning-style questionnaire were descriptively analyzed.

Information about the ethnographic variables was grouped and recorded. The individual responses of learning style preferences were categorized. Learning style preference scores for each category were classified into three ranges: first preference; second preference; and

last preference.

Learning style preference means by countries of origin (China, Japan, Korea, and Taiwan) were compared among the four nationalities to investigate the potential differences in their learning style preferences and among those within each category of variables to investigate the variables that appeared to affect the learning style differences.

Answers from Part III of the questionnaire were categorized and summarized to report whether the ESL students perceived that their learning styles had changed in response to their academic and non-academic experiences in the United States.

As a result, Japanese students, as a group, appeared to differ in their learning style preferences when compared to groups of Chinese, Korean, and Taiwanese students.

Age, class standing, field of study, and TOEFL scores, and length of time living and studying in the United States are variables that appeared to affect students' choice of learning styles. Other variables such as gender, language, and length of time studying English revealed no apparent clear pattern of differences.

Of the 227 respondents, 87 (38.32%) indicated that they had made changes in their learning styles since coming to the United States. The respondents' difficulty in speaking, reading, and listening to English was frequently

mentioned. Their difficulty in using this second language was cited as the underlying cause for many of their changes in learning/study preferences.

II. IMPLICATIONS

This investigation has provided information regarding the learning style preferences of East Asian ESL students at The University of Tennessee, Knoxville, Tennessee. In addition to supplying data on which decisions may be based, it raises some implications, particularly for teaching.

1. The findings from this study, according to individual responses, showed variations of learning style preferences among the East Asian ESL students. Other research such as Reid's (1987), also indicated differences in learning style preferences among other language/cultural groups and among U.S. students. Therefore, the instructor in an ESL classroom should be encouraged to give students a learning style inventory, such as the one used in this study, at the beginning of the class. This could indicate learning style preferences of particular ESL students in the classroom.

2. Instructional design for a class, particularly one that includes ESL students, may be varied to respond

to the learners' needs according to students' different learning styles.

An awareness of different styles of learning will encourage the teacher to introduce a variety of styles into the classroom and, even more positively, to turn to a wider range of sources for materials and methodological approaches. As Sears (1990) states:

The methods of instruction used in the classroom will be more effective if the learning and social modes of a student's culture are recognized and incorporate where possible into classroom (p.138).

3. Since the findings in this research indicated that kinesthetic and tactile appear to be preferred learning styles for many of the East Asian ESL students (and also to U.S. students, according to Reid, 1987), supervisors could encourage professors in U.S. higher educational institutions to include more classroom activities which involve kinesthetic and tactile learning such as: physical, "hands-on" experiences with materials; field trips; role-playing and dramatizations; experiments; constructing materials; handling models; and multi-media presentations. Traditional lectures, which may involve mainly visual and auditory learning styles, would be enriched by the addition of these kinesthetic/tactile approaches.

4. As a result, every country of origin and language background gave the group learning style a strongly negative

preference. Data from individual respondents also showed the same result. Besides, of the 87 respondents who indicated that they had made changes in their learning styles since coming to the United States, 15 (17.24%) stated that they participated in more group projects and experiments than they had done in their countries.

Other research such as Reid's (1987), Saville-Troike's (1976) found that language difficulty, shyness, and cultural background apparently are some reasons why East Asian ESL students didn't like group learning. However, group work is one of the best ways to "force" the ESL students whose English is very limited to improve their English, by learning together and interacting with native speakers in the same class.

Therefore, instructors could integrate a controlled amount of group learning into many classroom activities and discussions. To reduce the anxiety, frustration, and uncomfortable feelings of the students, it should be informal, often of short duration, and not related to students' grades.

5. The English Language Institute can be a very good place to start utilizing studies about the learning styles of ESL students.

At the beginning of each term, the Institute should be encouraged to give students a learning style inventory

and find out their learning style preferences. Students who study the English language at this Institute should be taught in ways that encourage them to utilize and practice a variety of learning styles whenever possible. This could help prepare them to function more effectively in the diverse teaching/learning situations which they will encounter in their varied college courses.

6. In order to become aware of learning style issues and characteristics, departments of counseling could set up group counseling sessions for new ESL students, especially during the orientation sessions at the beginning of each semester. They could give them a learning style test or inventory, identify their learning style preferences, and make them realize how diverse learning styles and teaching styles can be. They could then discuss with these ESL students how they could adapt and adjust to diverse teaching and learning styles in their various college courses.

The counseling department may also survey the teaching styles of professors in the university and have the information available so it could be used to counsel both ESL and U.S. students as they select courses and professors. This could better promote "matching" of teaching and learning style preferences.

7. Colleges of Education could integrate teaching/learning style issues and characteristics into their courses. This information could be helpful for all new teachers and especially for new ESL teachers.

III. RECOMMENDATIONS

The data generated in this study revealed that East Asian ESL students at The University of Tennessee, Knoxville, manifested a preference for a variety of learning styles with some variables appearing to affect these differences. This investigation also provided information regarding the self-perceived changes in learning styles of these students since they came to the United States.

It is therefore recommended that further research be done on learning style preferences to include additional ESL population subjects and information. More data are necessary in order to make generalizations within and across groups among other groups of East Asian students.

In addition, research should attempt to further investigate Japanese students' learning style preferences. Their reported distinctive preferences, tactile and kinesthetic appeared to differ from those of other nationalities involved in this study. Their relatively negative reaction to the visual learning style was also

unique.

There was some relationship between students' preferences for visual learning and auditory learning was shown in this study. There also appeared to be a common preference for both the kinesthetic and tactile learning styles. Further research on these preferred learning styles is recommended. It would be interesting to find out why many ESL students prefer visual learning and auditory learning, or tactile learning and kinesthetic learning, along with each other; how these two learning styles may be related to each other; and what characteristics these two learning styles may share in common. Is it possible that tactile and kinesthetic could be combined in designing future learning style inventories?

Even though the native languages of Korean and Taiwanese students are different, they shared many common characteristics in this investigation: (1) according to individual responses, they have the same first learning style preference (visual), second learning style preference (auditory), and least preferred learning style preference (group); (2) preference means of Korean and Taiwanese students in business administration and human ecology reported no statistical differences; (3) students with low TOEFL scores rated visual and auditory learning negatively and kinesthetic learning positively; and

(4) both nationalities selected the group learning style as their most negative preference, and the individual learning style as their next most negative preference. It would therefore be interesting if a further study about the learning style preferences of these two nationalities could be conducted.

Another research study should be focused on group learning, especially in terms of culture and previous experience, since it was unanimously selected as the negative learning preference by all nationalities involved in this study, and by most subjects in other studies (Vigna and Martin, 1982; Reid, 1987)

A research study similar to the one just completed should be done for native-born U.S. college students at The University of Tennessee, Knoxville. Results about their learning style preferences could be compared to those for the East Asian ESL students in the study and could contribute to more effective teaching and learning in classes including both groups of students.

LIST OF REFERENCES

REFERENCES

- Abraham, R.G. (1983). Relationships between use of the strategy of monitoring and cognitive style. Studies in Second Language Acquisition, 6, 17-32.
- Anderson, J.A., & Adams, M. (1992). Acknowledging the learning styles of diverse student populations: ^NImplications for instructional design. New Directions for Teaching and Learning, 49, 19-33.
- d'Anglejan, A., Painchaud, G., & Renaud, C. (1986). Beyond the language classroom: A study of communicative ability in adult immigrants following intensive instruction. TESOL Quarterly, 20, 185-206.
- Babbie, E.R. (1973). Survey Research Methods. Belmont, California: Wadsworth Publishing Company, Inc.
- Bahari, B. (1992). International Students. The Link, ^{LP32916}
IV(II), 1. ²⁷²⁵
- Bassano, S. (1986). Helping learners adapt to unfamiliar ^{Ar} methods. ELT Journal, 40, 13-19.
- Bell, J., & Burnaby, B. (1988). A Handbook for ESL Literacy. Oise Press: Ontario.
- Bialystok, E. (1985). The compatibility of teaching and learning strategies. Applied Linguistics, 6, 255-262.
- Bialystok, E., & Fröhlich, M. (1978). Variables of classroom achievement in second language learning. Modern Language Journal, 62, 327-366.
- Biberman, G., & Buchanan, J. (1986). Learning style and study skills differences across business and other academic majors. Journal of Education for Business, 61, 303-307.
- Bloom, B.S., Hastings, J.T., & Maduas, G.F. (1971). Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill.
- Brown, H.D. (1974). Affective variables in second language acquisition. Language Learning, 23, 231-243.

- Bruner, J.S. (1960). The Process of Education. Cambridge, MA: Harvard University Press.
- Canfield, A.A. (1988). Learning Styles Inventory Manual. Los Angeles: Western Psychological Service.
- Carlson, H. (1991). Learning style and program design in interactive multimedia. Education Technology Research and Development, 39(3), 41-48.
- Carnegie Foundation for the Advancement of Teaching. (1987). Foreign students: A valuable link. Change, 19(4), 39-43.
- Carter, R.T. (1990). Cultural value differences between African Americans and White Americans. Journal of College Student Development, 31, 71-79.
- Carver, D. (1984). Plans, learners' strategies, and self-direction in language learning. System, 12, 123-131.
- Census of Population and Housing Summary. (1990). Tape File 1A.
- Chapelle, C., & Roberts, C. (1986). Ambiguity tolerance and field independence as predictors of proficiency in English as a second language. Language Learning, 36, 27-45.
- Charkins, R.J., O'Toole, D.M., & Wetzel, J.N. (1985). Linking teacher and learning styles with student achievement and attitude. Journal of Economic Education, 16, 111-120. *HK 62.5.4586*
- Charles, H., & Stewart, M.A. (1991). Academic advising of international students. Journal of Multicultural Counseling and Development, 19, 173-181.
- Claxton, C.S., Adams, D., & Williams, D. (1982). Using student learning styles in teaching. AAHE Bulletin, 34, 7-10.
- Claxton, C.S., & Murrell, P.H. (1987). Learning Styles: Implication for Improving Educational Practices. (ASHE-ERIC Higher Education Report No.4). Washington, DC.: Association for the Study of Higher Education.

- Cohen, A. (1984). Studying second-language learning strategies: How do we get the information? Applied Linguistics, 5, 101-112.
- Cole, C.C., Jr. (1982). Improving Instruction: Issues and Alternatives for Higher Education. (AAHE-ERIC Higher Education Research Report No.4). Washington, DC.: American Association for Higher Education.
- Corbett, S.S., & Smith, WM.F. (1984). Identifying student learning styles: Proceed with caution! The Modern Language Journal, 68, 212-221.
- ✓ Cornett, C.E. (1983). What You Should Know About Teaching and Learning Styles. Bloomington, IN: Phi Delta Kappa Foundation.
- de Tornyay, R., & Russell, M.L. (1978). Helping the high-risk student achieve. Nursing Outlook, 26, 576-580.
- Dunn, R. (1988). Teaching students through their perceptual strengths or preferences. Journal of Reading, 31, 304-309.
- Dunn, R., Shea, T.C., Evans, W., & MacMurren, H. (1991). Learning style and equal protection: The next frontier. The Clearing House, 65, 93-95.
- Ehrman, M., & Oxford, R.L. (1989). Effects of sex differences, career choice, and psychological type on adult language learning strategies. The Modern Language Journal, 73, 1-13.
- Ellis, R. (1988). Instructed Second Language Acquisition. Presented at Distinguished Lecturer Series Seminar. Temple University, Osaka, Japan.
- Ely, C.M. (1986). An analysis of discomfort risktaking, sociability, and motivation in the L2 classroom. Language Learning, 36, 1-25.
- Ely, C.M. (1989). Tolerance of ambiguity and use of second language strategies. Foreign Language Annals, 22, 437-445.
- Esfahani, R. (1989). Ed tech and learning styles. Instructor, XCIX(1), 16-17.

- Evangelauf, J. (1988). The changing pool of candidates for nursing. Journal of Professional Nursing, 4, 145.
- Ewing, N.J., & Yong, F.L. (1992). A comparative study of the learning style preferences among gifted African-American, Mexican-American, and American-born Chinese middle grade students. Roeper Review, 14, 120-123.
- Flaughner, R. (1971). Patterns of Test Performance by High School Students of Four Ethnic Identities. (Research Report RB-71-25). Princeton, NJ: Educational Testing Service.
- Fuhrmann, B., & Grasha, A. (1983). Designing Classroom Experiences Based on Student Styles and Teaching Styles: A Practical Handbook for College Teaching. Boston, MA: Little, Brown & Co.
- Glick, J. (1975). Cognitive development in cross-cultural perspective. In F.D. Horowitz (Ed.), Review of Child Development Research (pp.595-654). Chicago: University of Chicago Press.
- Gonzales, R.R., & Roll, S. (1985). Relationship between acculturation, cognitive style, and intelligence. Journal of Cross-Cultural Psychology, 16, 190-205.
- Gradman, H.L., & Hanania, E. (1991). Language learning, background factors and ESL proficiency. The Modern Language Journal, 75, 39-51.
- Gregorc, A. (1972). Student learning styles: Diagnosing and prescribing programs. NASSP: 26.
- Gregorc, A.F. (1979). Learning/teaching styles: Their nature and effects. Student Learning Styles (pp.19-26). National Association of Secondary School Principals.
- Gregorc, A.F., & Butler, K.A. (1984). Learning is a matter of style. Vocational Education, 23, 27-29.
- Griggs, S.A. (1985). Counseling for individual learning styles. Journal of Counseling and Development, 64, 202-205.
- Guild, P.B. (1989). Meeting students' learning styles. Instructor, XCIX(1), 14-17.

- Hansen-Strain, L. (1989). Orality/literacy and group differences in second-language acquisition. Language Learning, 39, 469-496.
- Hatch, E. (1974). Second language learning universals? Working Paper on Bilingualism, 3, 1-17.
- Heikinheimo, P., & Shute, J. (1986). The adaptation of foreign students: Students views and institutional implications. Journal of College Student Personnel, 27, 399-406.
- Heyde, A. (1977). The relationship between self-esteem and the oral production of a second language. In H.D. Brown, C.A. Yorio, & R.H. Crymes (Eds.), On TESOL'77 (pp.226-240). Washington, DC.: TESOL.
- Hill, J.E., & Nunnery, D.N. (1973). The Educational Sciences. Bloomfield Hills, MI: Oakland Community College Press.
- Jenkins, J. (1981). Promoting Persistence Through Cognitive Style Analysis and Self-Management Techniques. (ERIC Document Reproduction Service No. ED22142). Carbondale, IL: Southern Illinois University.
- Joyce, B.R., Weil, M., & Wald, R. (1981). A structure for pluralism in teacher education. In B.R. Joyce, C.C. Brown, & L. Peck (Eds.), Flexibility in Teaching: An Excursion into the Nature of Teaching and Training (pp. 119-140). New York: Longman.
- Kaplan, R.B. (1984). English as a second language: an overview of the literature. In E.G. Barber, P.G. Altbach, & R.G. Myers (Eds.), Bridges to Knowledge: Foreign Students in Comparative Perspective (pp. 247-258). The University of Chicago Press: Chicago.
- Keefe, J.W. (1979). Learning styles: An overview. Student Learning Styles (pp.1-17). National Association of Secondary School Principals.
- Klineberg, O., & Hull, F.W. (1979). At a Foreign University: An International Study of Adaptation and Coping. Praeger Publishers: New York.
- Kolb, D.A. (1976). Learning Style Inventory Technical Manual. Boston, MA: McBer & Co.

- Kolb, D.A. (1981). Learning styles and disciplinary differences. In A.W. Chickering & Associates (Eds.), The Modern American College (pp.232-253). San Francisco: Jossey-Bass.
- Kolb, D.A. (1984). Experiential Learning: Experience as the Source of Learning and Development. Eaglewood Cliffs, NJ: Prentice-Hall.
- Krashen, S. D. (1982). Principles and Practice in Second Language Acquisition. Oxford: Pergamon.
- Kreuze, J.G., & Payne, D.D. (1989). The learning style preferences of Hispanic and Anglo college students: A comparison. Reading Improvement, 26, 166-169.
- Lesser, G.S., Fifter, G., & Clark, D.H. (1965). Mental abilities of children from different social-class and cultural groups. Monographs of the Society for Research in Child Development, 30 (4, Serial No. 102).
- Loustau, A. (1986). Diversity and challenge in our student body. Journal of Nursing Education, 25(3), 93.
- Marshall, E.A. (1985). Relationship between client learning style and preference for counselor approach. Counselor Education and Supervision, 24, 358-359.
- Marshall, J.C. (1987). Examination of a learning style typology. Research in Higher Education, 26, 417-429.
- Matthews, .B. (1991). The effects of learning style on grades of first-year college students. Research in Higher Education, 32, 253-268.
- Miller, C.D., Alway, M., & McKinley, D.L. (1987). Effects on learning styles and strategies on academic success. Journal of College Student Personnel, 25, 400-404.
- Moravcsik, M.J. (1985). Teaching third world students. Journal of College Science Teaching, 15, 86.
- Myers, I.B. (1976). Introduction to Type. Gainesville, FL: Center for the Application of Psychological Type.

- Myers, I.B., & McCaulley, M.H. (1985). A Guide to the Development and Use of the Myers-Briggs Type Indicators. Palo Alto, CA: Consulting Psychologists Press.
- McCaulley, M.H., & Natter, F.L. (1980). (Myers-Briggs) Psychological Type Differences in Education. Gainesville, FL: Center for the Application of Psychological Type.
- Naiman, N., Fröhlich, M., & Todesco, A. (1975). The good second language learner. TESL Talk 6, 58-75.
- National Center for Education Statistics (1991). Digest of Education Statistics 1991. US. Department of Education, 389-403.
- V Omaggio, A.C. (1978). Successful language learners: What do we know about them? ERIC/CLL News Bulletin, May, 2-3.
- Oxford, R.L., Ehrman, M.E., & Lavine, R.Z. (1990). Styles wars: Teacher-student style conflicts in the language classroom (fourth draft). Unpublished manuscript.
- Oxford-Carpenter, R. (1985). Second language learning strategies: What the researcher has to say. ERIC/CLL News Bulletin, 9(1), 1,3-4.
- Palmer, P.J. (1987). Community, conflict, and ways of knowing. Change, 19, 20-25.
- Price, G.E., & Griggs, S.A. (1985). Counseling College Students through Their Individual Learning Style. Ann Arbor, MI: ERIC/CAPS.
- Ramirez, M., & Price-Williams, D. (1974). Cognitive styles of children of three ethnic groups in the United States. Journal of Cross-Cultural Psychology, 5(2), 14-74.
- Reed, S.B., & Hudepohl, N.C. (1983). High-risk nursing students: Emergence on remedial/developmental program. Nurse Educator, 8(4), 21-25.
- Reichmann, S., & Grasha, A. (1974). A rational approach to developing and assessing the construct validity of a student learning style scales instrument. Journal of Psychology, 87, 213-223.

- Reid, J.M. (1987). The learning style preferences of ESL students. TESOL Quarterly, 21, 87-111.
- Roberts, D.V. (1977). Personalized learning processes. Revista Review Inter-Americana, 7, 139-143.
- ✓ Saville-Troike, M. (1976). Foundations for Teaching English as a Second Language. Prentice-Hall, Inc., Englewood Cliffs: New Jersey.
- Schmeck, R.R. (1983). Learning styles of college students. In R.F. Dillion and R.R. Schmeck (Eds.), Individual Differences in Cognition (pp.223-279). New York: Academic Press.
- Scribner, S., & Cole, M. (1981). The Psychology of Literacy. Cambridge, MA: Harvard University Press.
- Sears, C. (1990). Some common difficulties and how they can be avoided. In E. Murphy (Ed.), ESL: A Handbook for Teachers and Administrators in International School. Multilingual Matters Ltd.: Philadelphia.
- Smolowe, J. (1992). The pursuit of excellence. Time, 139(15), 59-60.
- Sternberg, R.J. (1990). Thinking styles: Keys to understanding student performance. Phi Delta Kappan, 75, 366-371.
- Tarone, E., Swain, M., & Fathman, A. (1976). Some limitations to the classroom applications of second language acquisition research. TESOL Quarterly, 10, 19-32.
- Tennessee Community Data: Knoxville Tennessee, September, 1992. Department of Economic and Community Development, Nashville, Tennessee.
- The University of Tennessee. (1993). Student Data Analysis.
- Tobias, S. (1982). When do instructional methods make a difference? Educational Researcher, 1, 4-9.
- Torbitt, G. (1981). Counsellor learning style: A variable in career choice. Canadian Counsellor, 15, 193-197.

- Trayer, M. (1991). Learning style differences: Gifted vs. regular language students. Foreign Language Annals, 24, 419-425.
- Tucker, G.R., Hamayan, E., & Genesee, F.H. (1976). Affective, cognitive, and social factors in second language acquisition. Canadian Modern Language Review, 32, 214-226.
- Vallerand, A.H. (1988). Differences in test performance and learner satisfaction among nurses with varying autonomy levels. Journal of Continuing Education in Nursing, 19, 216-222.
- Wagner, D.A., Messick, B.M., & Spratt, J. (1986). Studying literacy in Morocco. In B.B. Schiefflin & P. Gilmore (Eds.), The Acquisition of Literacy: Ethnographic Perspectives. Norwood, NJ: Ablex.
- Wenden, A. (1984). The process of intervention. Language Learning, 33, 103-121.
- Wenden, A. (1986). Incorporating learner training in the classroom. System, 14, 315-325.
- Witkin, H.A. (1954). Personality through Perception: An Experimental and Clinical Study. Westport, CT: Greenwood Press.
- Witkin, H.A. (1976). Cognitive style in academic performance and in teacher-student relations. In S. Messick & Associates (Eds.), Individuality in Learning (pp.38-92). San Francisco: Jossey-Bass.
- ✓ Wong, O.K. (1985). A paradigm of resonant teaching for Asian LEP students. Illinois TESOL/BE Newsletter, 13(1), 2.
- ✓ Wong Fillmore, L.W. (1986). Cultural factors in second language learning. Paper presented at the Fourth Rocky Mountain Regional TESOL Conference, Albuquerque, October.
- Xu, M. (1991). The impact of English-language proficiency on international graduate student's perceived academic difficulty. Research in Higher Education, 22, 557-570.

APPENDICES

APPENDIX A

PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE

感觉学习方式调查表

People learn in many different ways. For example, some people learn primarily with their eyes (visual learners) or with their ears (auditory learners); some people prefer to learn by experience and/or by "hands-on" tasks (kinesthetic or tactile learners); some people learn better when they work alone, while others prefer to learn in groups.

This questionnaire has been designed to help you identify the way(s) you learn best, that is, the way(s) you "prefer" to learn.

人们以许多不同的方式学习。例如，一些人主要通过视觉学习(视觉学习者)或者通过听觉学习(听觉学习者)；另一些人喜欢通过实验来学，或靠“亲手做一做”(运动或触觉学习者)。还有一些人独自学习效率，而另一些人愿意和小组人一起学习。

这个调查表是用来帮助你判断你的最佳学习方式，即你“偏爱”的学习方式。

PART 1

Please give information about yourself by putting a check mark (✓) in one box for each of the ten categories below.

请提供关于你自己的情况。在下面每一页里的方格内划钩。

1. Sex: 性别

☐ 1. Male 男	☐ 2. Female 女
------------------------------------	--------------------------------------
2. Age: 年龄

☐ 1. Under 20 二十以下	☐ 2. 20-24
☐ 3. 25-29	☐ 4. 30-34
☐ 5. 35 and over 三十五以及三十五以上	
3. Country of origin: 原籍国家

☐ 1. China (People's Republic of China) 中国 (中华人民共和国)
☐ 2. Japan 日本
☐ 3. Korea (Republic of Korea) 朝鲜 (朝鲜共和国)
☐ 4. Taiwan (Republic of China) 台湾 (中华民国)
4. Native language: 本土语言

☐ 1. Chinese 中文	☐ 2. Japanese 日文
☐ 3. Korean 朝鲜文	

(* If any dialects, please specify: _____)
假如用某种方言，请具体标明
5. Class: 学位

☐ 1. Undergraduate 本科	☐ 2. Graduate 研究生
--	--

6. Major field:
专业

- | | |
|--|---|
| ☐ 1. Liberal Arts
文科 | ☐ 2. Education
教育 |
| ☐ 3. Communications
交流 | ☐ 4. Architecture and Planning
建筑设计 |
| ☐ 5. Medicine
医学 | ☐ 6. Nursing
护士 |
| ☐ 7. Engineering
工程 | ☐ 8. Human Ecology
人类生态学 |
| ☐ 9. Social Work
社会工作 | ☐ 10. Business Administration
商业管理 |
| ☐ 11. Agricultural Sciences and Natural Resources
农业自然资源 | |
| ☐ 12. Other: (Please specify _____)
其它: 请具体说明 | |

7. Most recent TOEFL score:

最新托福成绩

- | | |
|-------------------------------------|-------------------------------------|
| ☐ 1. 300-349 | ☐ 2. 350-399 |
| ☐ 3. 400-449 | ☐ 4. 450-474 |
| ☐ 5. 475-499 | ☐ 6. 500-524 |
| ☐ 7. 525-549 | ☐ 8. 550-574 |
| ☐ 9. 575+ | |

8. Length of time studying English in your country:

在你本国学习英语期限:

- | | |
|--|--|
| ☐ 1. Less than 1 year
不到一年 | ☐ 2. 1-3 years
一到三年 |
| ☐ 3. 3-5 years
三到五年 | ☐ 4. Over 5 years
五年以上 |

9. Length of time living in the United States:

在美国居住期限:

- | | |
|--|---|
| ☐ 1. Less than 3 months
不到三个月 | ☐ 2. 3-6 months
三到六个月 |
| ☐ 3. 7-11 months
七到十一个月 | ☐ 4. 12-17 months
十二到十七个月 |
| ☐ 5. 18 months - 2 years
十八到二年 | ☐ 6. Over 2 years
二年以上 |
| ☐ 7. Over 3 years
三年以上 | |

10. Length of time studying in the United States:

在美国学习期限:

- | | |
|--|---|
| ☐ 1. Less than 3 months
不到三个月 | ☐ 2. 3-6 months
三到六个月 |
| ☐ 3. 7-11 months
七到十一个月 | ☐ 4. 12-17 months
十二到十七个月 |
| ☐ 5. 18 months - 2 years
十八到二年 | ☐ 6. Over 2 years
二年以上 |
| ☐ 7. Over 3 years
三年以上 | |

PART 2

Read each statement on the following pages. Please respond to the statements as they apply to your college/university studies.

Decide whether you agree or disagree with each statement. For example, if you strongly agree with statement #1, mark:

读下面的每句话。请根据这些句子是否适合你的学习情况回答。
判断你是否同意这些句子。例如，如果你“非常同意”第一个句子，就标上：X

	STRONGLY AGREE 非常同意	AGREE 同意	UNDECIDED 未定	DISAGREE 不同意	STRONGLY DISAGREE 非常不同意
1. When the teacher tells me the instructions, I understand better. 有老师给我讲解时，我理解得较好。	X				
2. etc. 等：					
3. etc. 等：					

Please respond to each statement quickly without too much thought. Try not to change your responses after you choose them.

Please use a pen to mark your choice.

请不要加太多思考对每个句子作出回答。作出选择后不要再改变你的回答，请用钢笔或圆珠笔标出你的选择。

	STRONGLY AGREE 非常同意	AGREE 同意	UNDECIDED undecided	DISAGREE 不同意	STRONGLY DISAGREE 非常不同意
1. When the teacher tells me the instructions, I understand better. 老师给我讲解, 我理解得较好。					
2. I prefer to learn by doing something in class. 我更喜欢在课堂上做些活动来学。					
3. I get more done when I work with others. 我和其他人一起工作时效率高。					
4. I learn more when I study with a group. 和一组人一起学习时我学得更多。					
5. In class, I learn best when I work with others. 在课堂上, 和其他人一起工作时我学得最好。					
6. I learn better by reading what the teacher writes on the chalkboard. 通过读老师写在黑板上的东西, 我学得较好。					
7. When someone tells me how to do something in class, I learn it better. 有人在课堂上告诉我怎么做某件事时, 我学得较好。					
8. When I do things in class, I learn better. 如在课堂上做事情, 我学得较好。					
9. I remember things I have heard in class better than things I have read. 我在课堂上听到的东西比记自己读的东西好。					
10. When I read instructions, I remember them better. 如我阅读讲解, 我记得较好。					
11. I learn more when I can make model of something. 如我做某东西的模型, 我学得更多。					
12. I understand better when I read instructions. 如我阅读讲解, 我理解得较好。					
13. When I study alone, I remember things better. 如我独自学习, 我记得更好。					
14. I learn more when I make something for class project. 如我为课堂项目做事, 我学得更多。					
15. I enjoy learning in class by doing experiments. 我更喜欢在课堂上做实验学习。					
16. I learn better when I make drawings as I study. 如我学习时绘画, 我学得更好。					
17. I learn better in class when the teacher gives a lecture. 如老师在课堂上讲演, 我学得更好。					
18. When I work alone, I learn better. 如我独自一个人做事, 我学得更好。					
19. I understand things better in class when I participate in role playing. 如在课堂上做扮演角色的游戏, 我理解得更好。					

	STRONGLY AGREE 非常同意	AGREE 同意	UNDECIDED 未定	DISAGREE 不同意	STRONGLY DISAGREE 非常不同意
20. I learn better in class when I listen to someone. 如在课堂上听人讲解, 我学得更好。					
21. I enjoy working on an assignment with two or three classmates. 我喜欢和两、三个同学一起做作业。					
22. When I build something, I remember what I have learned better. 如我建造某个东西时, 我能更好地记下所学的东西。					
23. I prefer to study with others. 我喜欢和其他人一起学习。					
24. I learn better by reading than by listening to someone. 我通过阅读比通过听讲学得更好。					
25. I enjoy making something for a class project. 我喜欢为课堂项目做事。					
26. I learn best in class when I can participate in related activities. 我在课堂上参加互相关联的活动时学得更好。					
27. In class, I work better when I work alone. 在课堂上我独自做事时做得更好。					
28. I prefer working on projects by myself. 我宁可独自做项目。					
29. I learn more by reading textbooks than by listening to lecture. 我读课本比听讲座学得多。					
30. I prefer to work by myself. 我宁愿独自工作。					

PART 3

Do you think you have changed any of the ways you study or learn since you came to the United States?
你认为自从你来美国后你已经改变了你的学习方式吗?

☐ Yes
是

☐ No
不是

If yes, please describe the way you have changed in the space below.

(Please write your response in English, if possible.)

如果“是”，在下面的空格里描述你改变的方式：
(可能的话，请用英语回答)

Thank you!
谢谢你!

PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE

知覚による学習方法の選択のためのアンケート

People learn in many different ways. For example, some people learn primarily with their eyes (visual learners) or with their ears (auditory learners); some people prefer to learn by experience and/or by "hands-on" tasks (kinesthetic or tactile learners); some people learn better when they work alone, while others prefer to learn in groups.

This questionnaire has been designed to help you identify the way(s) you learn best, that is, the way(s) you "prefer" to learn.

人は皆色々な方法で学びます。たとえば、ある人々は主に視覚から学び（視覚学習者）、又ある人は聴覚から学びます（聴覚学習者）。ある人は体験や実地訓練で学ぶ方を好みます（実体験学習者）。又、ある人は一人で学習する方がより効果的だと思い、他方、グループで学ぶ方を好む人もいます。

この質問表は皆さんの“好み”の学習方法——最も効果的に学べる方法を見極める為に作成されました。

PART 1

Please give information about yourself by putting a check mark (✓) in one box for each of the ten categories below.

あなた自身について、以下の10項目の□の中であてはまるものに(✓)を書き入れてください。

1. Sex: 性別

☐ 1. Male 男	☐ 2. Female 女
---------------------------------------	---
2. Age: 年齢

☐ 1. Under 20 20才未満	☐ 2. 20-24
☐ 3. 25-29	☐ 4. 30-34
☐ 5. 35 and over 35才以上	
3. Country of origin: 出身国

☐ 1. China (People's Republic of China) 中華人民共和国
☐ 2. Japan 日本
☐ 3. Korea (Republic of Korea) 韓国
☐ 4. Taiwan (Republic of China) 台湾
4. Native language: 母国語

☐ 1. Chinese 中国語	☐ 2. Japanese 日本語
☐ 3. Korean 韓国語	

(* If any dialects, please specify: _____)
(もし、その他の地域語の場合は特記してください。_____)
5. Class: レベル

☐ 1. Undergraduate 学部生	☐ 2. Graduate 大学院生
--	--

6. Major field: 専攻
- | | |
|--|--|
| ☐ 1. Liberal Arts
人文学 | ☐ 2. Education
教育学 |
| ☐ 3. Communications
コミュニケーション | ☐ 4. Architecture and Planning
建築・都市計画 |
| ☐ 5. Medicine
医学 | ☐ 6. Nursing
看護 |
| ☐ 7. Engineering
工学 | ☐ 8. Human Ecology
社会・人間生態学 |
| ☐ 9. Social Work
ソーシャルワーク | ☐ 10. Business Administration
経営管理学 |
| ☐ 11. Agricultural Sciences and Natural Resources
農学・天然資源 | |
| ☐ 12. Other: (Please specify _____)
その他: (特記してください: _____) | |

7. Most recent TOEFL score:
最新のTOEFLスコア

- | | |
|-------------------------------------|-------------------------------------|
| ☐ 1. 300-349 | ☐ 2. 350-399 |
| ☐ 3. 400-449 | ☐ 4. 450-474 |
| ☐ 5. 475-499 | ☐ 6. 500-524 |
| ☐ 7. 525-549 | ☐ 8. 550-574 |
| ☐ 9. 575+ | |

8. Length of time studying English in your country:
自国での英語学習期間

- | | |
|--|--|
| ☐ 1. Less than 1 year
1年未満 | ☐ 2. 1-3 years
1-3年 |
| ☐ 3. 3-5 years
3-5年 | ☐ 4. Over 5 years
5年以上 |

9. Length of time living in the United States:
米国での滞在期間

- | | |
|--|---|
| ☐ 1. Less than 3 months
3ヶ月未満 | ☐ 2. 3-6 months
3-6ヶ月 |
| ☐ 3. 7-11 months
7-11ヶ月 | ☐ 4. 12-17 months
12-17ヶ月 |
| ☐ 5. 18 months - 2 years
18ヶ月-2年 | ☐ 6. Over 2 years
2年以上 |
| ☐ 7. Over 3 years
3年以上 | |

10. Length of time studying in the United States:
米国での学習期間

- | | |
|--|---|
| ☐ 1. Less than 3 months
3ヶ月未満 | ☐ 2. 3-6 months
3-6ヶ月 |
| ☐ 3. 7-11 months
7-11ヶ月 | ☐ 4. 12-17 months
12-17ヶ月 |
| ☐ 5. 18 months - 2 years
18ヶ月-2年 | ☐ 6. Over 2 years
2年以上 |
| ☐ 7. Over 3 years
3年以上 | |

PART 2

Read each statement on the following pages. Please respond to the statements as they apply to your college/university studies.

Decide whether you agree or disagree with each statement. For example, if you strongly agree with statement #1, mark:

以下の文を読んで、あなたの大学での学習経験上あてはまると思うものに"X"をつけてください。
例えば、#1の内容を"全くその通りだ"と思うなら、

	全 く そ の と り だ 全 く そ の と り だ 全 く そ の と り だ	全 く そ の と り だ 全 く そ の と り だ 全 く そ の と り だ	全 く そ の と り だ 全 く そ の と り だ 全 く そ の と り だ	全 く そ の と り だ 全 く そ の と り だ 全 く そ の と り だ	全 く そ の と り だ 全 く そ の と り だ 全 く そ の と り だ
	STRONGLY AGREE	AGREE	UNDECIDED	DISAGREE	STRONGLY DISAGREE
1. When the teacher tells me the instructions, I understand better. 先生が口頭で説明した方が、よく理解できる。	X				
2. etc.					
3. etc.					

Please respond to each statement quickly without too much thought. Try not to change your responses after you choose them.

Please use a pen to mark your choice.

それぞれの質問に考え過ぎないで、素早く答えてください。一度答えたら、結果を変更しないようにしてください。
マークするときには、ボールペンを使用してください。

	STRONGLY AGREE 強く同意する	AGREE 同意する	UNDECIDED どちらでもない	DISAGREE 同意しない	STRONGLY DISAGREE 強く同意しない
1. When the teacher tells me the instructions, I understand better. 先生が口頭で説明した方が、よく理解できる。					
2. I prefer to learn by doing something in class. 授業中、実際に何かをやってみる方が好きだ。					
3. I get more done when I work with others. 仲間と一緒に何かをする方がよりたくさんできる。					
4. I learn more when I study with a group. グループ学習の方がよりよく学べる。					
5. In class, I learn best when I work with others. 授業中、仲間と一緒に勉強する時が一番学べる。					
6. I learn better by reading what the teacher writes on the chalkboard. 先生が黒板に書いたものを読む方がよくわかる。					
7. When someone tells me how to do something in class, I learn it better. 授業中、互に口頭で何かのやり方を説明してくれたほうが、よくわかる。					
8. When I do things in class, I learn better. 授業中、実際に自分で何かをやった方が、よくわかる。					
9. I remember things I have heard in class better than things I have read. 授業中、聞いたことよりも読んだことのほうがよく覚えている。					
10. When I read instructions, I remember them better. 説明を「読んだ」ときの方がそれをよく覚えている。					
11. I learn more when I can make model of something. 何か手本になるものがあつた時のほうがよく理解できる。					
12. I understand better when I read instructions. 説明などを「読んだ」時の方がよく理解できる。					
13. When I study alone, I remember things better. 一人で勉強する方がよく覚えらる。					
14. I learn more when I make something for class project. クラス実習のときに、実際に自分で何かを作った時の方がよくわかる。					
15. I enjoy learning in class by doing experiments. 授業中、実験・試行などをして勉強するのは楽しい。					
16. I learn better when I make drawings as I study. 勉強する時、何かを書いた時の方が(字でも絵でも)よくわかる。					
17. I learn better in class when the teacher gives a lecture. 授業中、先生が講義をしたときのほうがよくよくわかる。					
18. When I work alone, I learn better. 一人で何かをする方がよく理解できる。					
19. I understand things better in class when I participate in role playing. 授業中、割り当てられた役に実際に参加した時のほうが、事柄をよく理解できる。					

	全くその通りだとおもう STRONGLY AGREE	やや同意 AGREE	どちらともおえない UNDECIDED	やや反対 DISAGREE	全くその通りでない STRONGLY DISAGREE
20. I learn better in class when I listen to someone. 授業中、仲間から何かを“聞いた”方がよくわかる。					
21. I enjoy working on an assignment with two or three classmates. 二、三人のクラスメートと宿題などをするのが好きだ。					
22. When I build something, I remember what I have learned better. 実際に何かを作った時の方が、習ったことをよくおぼえている。					
23. I prefer to study with others. 他の人と一緒に勉強する方が好きだ。					
24. I learn better by reading than by listening to someone. 他の人から何かを“聞く”よりも、“読む”方がよくわかる。					
25. I enjoy making something for a class project. クラス実習で何かを作るのは楽しい。					
26. I learn best in class when I can participate in related activities. 授業中、授業内容に関連した活動に参加することのできた時に一番よくその内容を理解できる。					
27. In class, I work better when I work alone. 授業中、一人で何かをするほうが能率、効果的。					
28. I prefer working on projects by myself. 一人で、企画、計画などをする方が好きだ。					
29. I learn more by reading textbooks than by listening to lecture. 講義を聞くよりも教科書を読んだほうが、よくわかる。					
30. I prefer to work by myself. 一人で勉強する方が好きだ。					

PART 3

Do you think you have changed any of the ways you study or learn since you came to the United States?

アメリカに来てからあなたの勉強の仕方や学び方は変わったと思いますか。

☐ Yes
はい

☐ No
いいえ

If yes, please describe the way you have changed in the space below.

(Please write your response in English, if possible.)

もし、答えが“はい”なら実際にどのように変わったか教えてください。
(英語でも日本語でもどちらでも結構です。)

Thank you !

ありがとうございました。

PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE

지각 학습 양상 선호 설문지

People learn in many different ways. For example, some people learn primarily with their eyes (visual learners) or with their ears (auditory learners); some people prefer to learn by experience and/or by "hands-on" tasks (kinesthetic or tactile learners); some people learn better when they work alone, while others prefer to learn in groups.

This questionnaire has been designed to help you identify the way(s) you learn best, that is, the way(s) you "prefer" to learn.

사람들은 여러가지 다른 방법을 통하여 배웁니다. 예를 들면, 어떤 사람은 주로 그들의 눈으로 (시각학습자), 또는 그들의 귀로써 (청각학습자); 어떤 이들은 경험을 통하여 배우기를 선호하고 (근육운동 지각 학습자, 예: 학습 활동에 참여) 그리고/또는 실제적인 학습과제를 실천 하 봄으로써 (촉각을 통한 학습자, 예: 공작, 필기); 어떤 사람은 그들 혼자 일하는 것을 선호하 는 반면, 또 다른이들은 여럿이 함께 학습 하기를 더 좋아 합니다.

이 설문지는 귀하의 최선의 학습방법, 즉 귀하께서 가장 선호하는 학습방법을, 확인하는 데 도움을 줄 수 있도록 작성 되었습니다.

PART 1

Please give information about yourself by putting a check mark (✓) in one box for each of the ten categories below.

다음 10개 문항 각 네모 안에 체크(✓) 표시를 하여, 귀하에 대한 인적사항을 알려 주시기 바랍니다.

1. Sex: 성별: ☐ 1. Male 남성 ☐ 2. Female 여성
2. Age: 연령: ☐ 1. Under 20 20세 미만 ☐ 2. 20-24
☐ 3. 25-29 ☐ 4. 30-34
☐ 5. 35 and over 35세 이상
3. Country of origin: 국적: ☐ 1. China (People's Republic of China) 중국 (중화 인민 공화국)
☐ 2. Japan 일본
☐ 3. Korea (Republic of Korea) 한국 (대한민국)
☐ 4. Taiwan (Republic of China) 대만 (중화 인민국)
4. Native language: 모국어: ☐ 1. Chinese 중국어 ☐ 2. Japanese 일본어
☐ 3. Korean 한국어
 (* If any dialects, please specify: _____)
 (혹시, 사투리를 쓰시면 구체적으로 표기하여 주십시오: _____)
5. Class: 재학정도: ☐ 1. Undergraduate 학부 ☐ 2. Graduate 대학원

6. Major field: 전공분야:
- | | |
|---|---|
| ☐ 1. Liberal Arts
인문 대학 | ☐ 2. Education
교육 대학 |
| ☐ 3. Communications
신문 방송 대학 | ☐ 4. Architecture and Planning
건축 설계 대학 |
| ☐ 5. Medicine
의과 대학 | ☐ 6. Nursing
간호 대학 |
| ☐ 7. Engineering
공과 대학 | ☐ 8. Human Ecology
가정 대학 |
| ☐ 9. Social Work
사회사업 대학 | ☐ 10. Business Administration
경영 대학 |
| ☐ 11. Agricultural Sciences and Natural Resources
농과 대학 | |
| ☐ 12. Other: (Please specify _____)
기타: (구체적으로 _____) | |

7. Most recent TOEFL score:
가장 최근의 TOEFL 성적:

- | | |
|-------------------------------------|-------------------------------------|
| ☐ 1. 300-349 | ☐ 2. 350-399 |
| ☐ 3. 400-449 | ☐ 4. 450-474 |
| ☐ 5. 475-499 | ☐ 6. 500-524 |
| ☐ 7. 525-549 | ☐ 8. 550-574 |
| ☐ 9. 575+ | |

8. Length of time studying English in your country:
귀하의 나라에서 영어를 공부 한 기간:

- | | |
|---|---|
| ☐ 1. Less than 1 year
1년 미만 | ☐ 2. 1-3 years
1-3년 |
| ☐ 3. 3-5 years
3-5년 | ☐ 4. Over 5 years
5년 이상 |

9. Length of time living in the United States:
미국에 체류 한 기간:

- | | |
|--|---|
| ☐ 1. Less than 3 months
3개월 미만 | ☐ 2. 3-6 months
3-6개월 |
| ☐ 3. 7-11 months
7-11개월 | ☐ 4. 12-17 months
12-17개월 |
| ☐ 5. 18 months - 2 years
18개월-2년 | ☐ 6. Over 2 years
2년 이상 |
| ☐ 7. Over 3 years
3년 이상 | |

10. Length of time studying in the United States:
미국에서 공부 한 기간:

- | | |
|--|---|
| ☐ 1. Less than 3 months
3개월 미만 | ☐ 2. 3-6 months
3-6개월 |
| ☐ 3. 7-11 months
7-11개월 | ☐ 4. 12-17 months
12-17개월 |
| ☐ 5. 18 months - 2 years
18개월-2년 | ☐ 6. Over 2 years
2년 이상 |
| ☐ 7. Over 3 years
3년 이상 | |

PART 2

Read each statement on the following pages. Please respond to the statements as they apply to your college/university studies.
Decide whether you agree or disagree with each statement. For example, if you strongly agree with statement #1, mark:

다음의 각 문항을 자세히 읽고, 귀하의 이대학에서의 학습과 가장 일치 되는 사항에 답을 하여 주십시오.

각 문항 마다, 귀하의 동의 여부를 결정하여 주시기 바랍니다. 예를 들어, 1번 문항에

"매우 그렇다"고 생각하면 "매우 그렇다"에 X표를 하여 주십시오.

	STRONGLY AGREE 매우 그렇다	AGREE 그렇다	UNDECIDED 잘 모르겠다	DISAGREE 그렇지 않다	STRONGLY DISAGREE 매우 그렇지 않다
1. When the teacher tells me the instructions, I understand better. 강사가 어떻게 하는 방법을 알려 주면 잘 이해하기 쉽다.	X				
2. etc. 기타.....					
3. etc. 기타.....					

Please respond to each statement quickly without too much thought. Try not to change your responses after you choose them.

Please use a pen to mark your choice.

각 문항에 너무 많이 생각하지 말고 빠르게 대답하여 주십시오.

또한 한번 답을 한 다음 수정하지 말아 주십시오.

펜을 사용하여 답을 하여 주십시오.

	STRONGLY AGREE 매우 그렇다	AGREE 그렇다	UNDECIDED 잘 모르겠다	DISAGREE 그렇지 않다	STRONGLY DISAGREE 전혀 그렇지 않다
1. When the teacher tells me the instructions, I understand better. 강사가 어떻게 하는 방법을 알려 주면 좀 더 이해하기 쉽다.					
2. I prefer to learn by doing something in class. 나는 수업시간에 무엇을 하 곰으로써 배우기를 선호한다.					
3. I get more done when I work with others. 나는 다른이들과 더불어 일을 할 때 더 많이 성취한다.					
4. I learn more when I study with a group. 나는 그룹으로 공부하면 더 많이 배운다.					
5. In class, I learn best when I work with others. 나는 수업시간에 다른이들과 더불어 일을 할 때 가장 많이 배운다.					
6. I learn better by reading what the teacher writes on the chalkboard. 나는 강사가 칠판에 쓴 내용을 읽어 곰으로써 더 잘 배운다.					
7. When someone tells me how to do something in class, I learn it better.있다. 나는 수업시간에 누군가가 나에게 어떻게 하는 방법을 알려 주면, 그것을 더 잘 배울수					
8. When I do things in class, I learn better. 나는 수업시간에 어떤 일들을 실행하여 곰으로써 더 잘 배운다.					
9. I remember things I have heard in class better than things I have read. 나는 내가 수업시간에 들은 것 보다는 곰른 것을 더 잘 기억한다.					
10. When I read instructions, I remember them better. 나는 지시사항을 읽어 곰 때, 그것을 더 잘 기억한다.					
11. I learn more when I can make model of something. 나는 배운 것을 그대로 옮겨 곰 수 있을 때 더 많이 배운다.					
12. I understand better when I read instructions. 나는 지시사항을 읽어 곰으로써 더 잘 이해한다.					
13. When I study alone, I remember things better. 나는 혼자 공부할 때 내용을 더 잘 기억한다.					
14. I learn more when I make something for class project. 나는 수업과제도 무엇을 직접 실행 하 곰 때 더 많이 배운다.					
15. I enjoy learning in class by doing experiments. 나는 수업시간에 실험실습을 통하여 배우기를 즐긴다.					
16. I learn better when I make drawings as I study. 나는 수업내용을 기록 함으로써 더 잘 배운다.					
17. I learn better in class when the teacher gives a lecture. 나는 수업시간에 강사가 강의를 할 경우 더 잘 배운다.					
18. When I work alone, I learn better. 나는 혼자 일 함으로써 더 잘 배운다.					
19. I understand things better in class when I participate in role playing. 나는 수업시간에 수업에 관련된 어떤 역할을 할 때 곰름으로써 내용을 더 잘 이해한다.					

	STRONGLY AGREE 매우 그렇다	AGREE 그렇다	UNDECIDED 감 모르겠다	DISAGREE 그렇지 않다	STRONGLY DISAGREE 전혀 그렇지 않다
20. I learn better in class when I listen to someone. 나는 수업시간에 다른 사람이 말하는 것을 들어 봄으로써 더 잘 배운다.					
21. I enjoy working on an assignment with two or three classmates. 나는 교과과제를 두 세명의 동료와 더불어 수행하기를 즐긴다.					
22. When I build something, I remember what I have learned better. 나는 배운 것들을 행동으로 옮겨 봄으로써 더 잘 기억한다.					
23. I prefer to study with others. 나는 다른 사람들과 함께 공부하기를 더 좋아한다.					
24. I learn better by reading than by listening to someone. 나는 다른 사람이 말하는 것을 듣는 것 보다 읽기 봄으로써 더 잘 배운다.					
25. I enjoy making something for a class project. 나는 수업과제를 위해 무엇을 만들기를 즐겨함 한다.					
26. I learn best in class when I can participate in related activities. 나는 수업에 관련된 제반의 활동에 참여 하 봄으로써 가장 잘 배운다.					
27. In class, I work better when I work alone. 나는 수업시간에 혼자 공부할 때 더 잘 배운다.					
28. I prefer working on projects by myself. 나는 수업과제들을 혼자 해결하기를 더 좋아한다.					
29. I learn more by reading textbooks than by listening to lecture. 나는 강의를 들어서 보다는 교과서를 읽음으로써 더 많이 배운다.					
30. I prefer to work by myself. 나는 혼자 일을 수행하기를 선호한다.					

PART 3

Do you think you have changed any of the ways you study or learn since you came to the United States?

귀하께서는 미국에 온 이후로 귀하의 학습형태에 어떤 변화가 있었 다고 생각하십니까?

☐ Yes
예

☐ No
아니오

If yes, please describe the way you have changed in the space below.

(Please write your response in English, if possible.)

만약 "예" 이면, 다음의 공간에 귀하의 변화 내용을 기록하여 주시 기 바랍니다.

(가능하면 영어로 대답해 주시기 바랍니다.)

Thank you !

감사 합니다!

APPENDIX B

PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE

NAME _____ AGE _____ DATE _____
 NATIVE COUNTRY _____ NATIVE LANGUAGE _____
 GRADUATE STUDENT _____ UNDERGRADUATE _____ MALE _____ FEMALE _____
 How long did you study English in your country? _____
 How long have you been living in the U.S.? _____
 How long have you studied English in the U.S.? _____
 What is your major field? _____
 Most recent TOEFL score? _____ Date of TOEFL? _____

DIRECTIONS:

People learn in many different ways. For example, some people learn primarily with their eyes (visual learners) or with their ears (auditory learners); some people prefer to learn by experience and/or by "hands-on" tasks (kinesthetic or tactile learners); some people learn better when they work alone while others prefer to learn in groups.

This questionnaire has been designed to help you identify the way(s) you learn best--the way(s) you prefer to learn.

Read each statement on the following pages. Please respond to the statements **AS THEY APPLY TO YOUR STUDY OF ENGLISH**.

Decide whether you agree or disagree with each statement. For example, if you strongly agree, mark:

strongly agree	agree	undecided	disagree	strongly disagree
x				

Please respond to each statement quickly, without too much thought. Try not to change your responses after you choose them. Please answer all the questions. Please use a pen to mark your choices.

© Copyright, 1984

PERCEPTUAL LEARNING STYLE PREFERENCE QUESTIONNAIRE

SA Strongly Agree	A Agree	U Undecided	D Disagree	SD Strongly Disagree
-------------------------	------------	----------------	---------------	----------------------------

	SA	A	U	D	SD
1. When the teacher tells me the instructions I understand better.					
2. I prefer to learn by doing something in class.					
3. I get more work done when I work with others.					
4. I learn more when I study with a group.					
5. In class, I learn best when I work with others.					
6. I learn better by reading what the teacher writes on the chalkboard.					
7. When someone tells me how to do something in class, I learn it better.					
8. When I do things in class, I learn better.					
9. I remember things I have heard in class better than things I have read.					
10. When I read instructions, I remember them better.					
11. I learn more when I can make a model of something.					
12. I understand better when I read instructions.					
13. When I study alone, I remember things better.					
14. I learn more when I make something for a class project.					
15. I enjoy learning in class by doing experiments.					
16. I learn better when I make drawings as I study.					
17. I learn better in class when the teacher gives a lecture.					
18. When I work alone, I learn better.					
19. I understand things better in class when I participate in role-playing.					

- OVER -

	SA	A	U	D	SD
20. I learn better in class when I listen to someone.					
21. I enjoy working on an assignment with two or three classmates.					
22. When I build something, I remember what I have learned better.					
23. I prefer to study with others.					
24. I learn better by reading than by listening to someone.					
25. I enjoy making something for a class project.					
26. I learn best in class when I can participate in related activities.					
27. In class, I work better when I work alone.					
28. I prefer working on projects by myself.					
29. I learn more by reading textbooks than by listening to lectures.					
30. I prefer to work by myself.					

APPENDIX C

Department of English
P.O. Box 3353
Laramie, Wyoming 82071-3353
(307) 766-6452

May 3, 1992



Torpong J. Goodson
1611 Laurel Ave. #1221
Knoxville, TN 37916

Dear Torpong (and please, I am Joy):

First, apologies for taking this much time to reply to your letter; it is the end of my semester, I am trying to get the computer galley of my book finished, and I leave for a month of teacher-training in Russia on the 8th. In short, I am in a frenzy. But I wanted to let you know that you have my full permission to use the Learning Styles survey, and I look forward to hearing about the results.

I am enclosing the complete survey, and I ask only that you use the actual survey statements as they are; if you saw my Forum column in the *TESOL Quarterly*, you know already that I spent a summer norming this survey, and that I am cognizant of the problems that data from non-normed surveys present. I am also enclosing a list of other people who have worked with my survey in case you might want to correspond with some of them. I would particularly recommend Nancy Kroonenbery, Belen Sy, and Chizuru Hayashi. They have been most helpful in keeping me informed about the newest learning styles literature. In addition, Christie Stebbins at the University of Wyoming is working with the survey currently, and I am doing some cooperative research with teachers in Hungary who are using the survey.

I'm pleased that you are going to work with the survey, and I send you wishes for good learning experiences and wonderful data. Please send me a copy of your results. And once the middle of June comes, I should be able to reply to any correspondence more quickly and completely. Thanks again for writing.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joy Reid', with a large, sweeping flourish above it.

Joy Reid

APPENDIX D

1611 Laurel Ave., Apt. # 1221
Knoxville, TN 37916

August 31, 1992

Dear

I am a doctoral student at the Department of Curriculum and Instruction, College of Education, The University of Tennessee at Knoxville, and am currently involved in a study dealing with the learning style preferences of East Asian (Chinese, Japanese, Korean, and Taiwanese) ESL (English as a second language) students. The purposes of the study are to investigate the learning style preferences and ethnographic variables that effect the differences in learning styles of these students, and to investigate self-perceived changes in learning styles since they came to the United States.

Information obtained in this study should contribute to the effectiveness of teaching and learning of these college-level ESL students not only at The University of Tennessee at Knoxville, but perhaps higher educational institutions in the State of Tennessee and all over the United States.

In order to maintain anonymity and confidentiality, the names of the participants will not be mentioned at all in the study. In addition, statistical analysis will be based upon the 4 cultural groups, not upon individual responses.

Please take a few minutes to complete the enclosed survey, seal it in the attached envelope and drop it in any mailbox. Your help and co-operation will be greatly appreciated. The answers will aid the researcher in finding the ways students learn which, indeed, is very important to good teaching.

Please feel free to contact the researcher at any time if you have further questions about the project or about your participation in it.

亲爱的

我是田纳西大学教育学院课程和教学系的硕士生。我目前正在进行一项有关东亚学生学习英语第二语言时所偏爱的学习方式的研究。这项研究的目的在于调查东亚学生偏爱的学习方式，寻找这些学习方式的种族因素，以及到美国后自我感觉到的学习方式的改变。

这项研究所收集的资料将有助于不仅田纳西大学也许田纳西州以及全美学院级英语第二语言学生的教学和学习。

为了维护参与人的匿名和保密权利，在研究中不用参与人的名字。另外统计分析是建立在四个文化组的共同答案上，而不是个人的。

请用几分钟填写免信封里的调查表，封套所附的信封里，把它投入信箱。感谢你的帮助合作，你的回答将有助于研究者发现学生的学习方式，而这种学习方式对好的教学是至关重要的，如你对这项研究或你的参加有什么问题，请随时与研究者联系。

Sincerely

Torpong J. Goodson

1611 Laurel Ave., Apt.# 1221
Knoxville, TN 37916

August 31, 1992

Dear

I am a doctoral student at the Department of Curriculum and Instruction, College of Education, The University of Tennessee at Knoxville, and am currently involved in a study dealing with the learning style preferences of East Asian (Chinese, Japanese, Korean, and Taiwanese) ESL (English as a second language) students. The purposes of the study are to investigate the learning style preferences and ethnographic variables that effect the differences in learning styles of these students, and to investigate self-perceived changes in learning styles since they came to the United States.

Information obtained in this study should contribute to the effectiveness of teaching and learning of these college-level ESL students not only at The University of Tennessee at Knoxville, but perhaps higher educational institutions in the State of Tennessee and all over the United States.

In order to maintain anonymity and confidentiality, the names of the participants will not be mentioned at all in the study. In addition, statistical analysis will be based upon the 4 cultural groups, not upon individual responses.

Please take a few minutes to complete the enclosed survey, seal it in the attached envelope and drop it in any mailbox. Your help and cooperation will be greatly appreciated. The answers will aid the researcher in finding the ways students learn which, indeed, is very important to good teaching.

Please feel free to contact the researcher at any time if you have further questions about the project or about your participation in it.

私はテネシー大学ノックスビル校、教育学部、教科・教育学科の博士課程の学生です。現在、東アジア出身（中国、日本、韓国、台湾）のESL(第二言語としての英語)の学生の学習方法の採択というテーマに取り組んでいます。この研究の目的は学習方法の採択とそれに影響をあたえる民族誌学的変数を調査すること、及び、それらの学生が米国にきた後の学習方法の変化の自己認識を調査することです。

この研究によって得られた情報はテネシー大学・ノックスビル校の学生だけではなく、テネシー州及び全米のカレッジレベルのESL 学生のための効果的な教授法、学習法の為に役立つと考えます。

守秘のため、個人の名前に言及することは、一切ありません。また、統計の分析は四つの文化のグループにたいして行われるもので、個人の回答にたいして行われるものではありません。

恐れ入りますが、同封のアンケート用紙にご回答のうえ、添付の封筒に入れ、最寄りのポストに投函してください。ご協力に感謝いたします。これらの回答は学生の学習方法を知るためーそれは良い教授法を知るためには大変重要なことですーの手助けになるものです。

このアンケートに関することで何かご質問がありましたら、いつでも御遠慮なくご連絡ください。

Sincerely

Ter pang J. Goodson

1611 Laurel Ave., Apt. # 1221
Knoxville, TN 37916

August 31, 1992

Dear

I am a doctoral student at the Department of Curriculum and Instruction, College of Education, The University of Tennessee at Knoxville, and am currently involved in a study dealing with the learning style preferences of East Asian (Chinese, Japanese, Korean, and Taiwanese) ESL (English as a second language) students. The purposes of the study are to investigate the learning style preferences and ethnographic variables that effect the differences in learning styles of these students, and to investigate self-perceived changes in learning styles since they came to the United States.

Information obtained in this study should contribute to the effectiveness of teaching and learning of these college-level ESL students not only at The University of Tennessee at Knoxville, but perhaps higher educational institutions in the State of Tennessee and all over the United States.

In order to maintain anonymity and confidentiality, the names of the participants will not be mentioned at all in the study. In addition, statistical analysis will be based upon the 4 cultural groups, not upon individual responses.

Please take a few minutes to complete the enclosed survey, seal it in the attached envelope and drop it in any mailbox. Your help and co-operation will be greatly appreciated. The answers will aid the researcher in finding the ways students learn which, indeed, is very important to good teaching.

Please feel free to contact the researcher at any time if you have further questions about the project or about your participation in it.

안녕하십니까?

저는 현재 테네시 대학교 교육대학 커리큘럼과 인스트럭션과의 박사과정에 재학 중인 학생이며, 영어를 제 2언어로 사용하는 동아시아 국가 (대한민국, 일본, 대만, 중국) 출신 학생의 학습 양상 선호를 연구하고 있습니다. 이 연구의 목적은 이들 학생의 학습 양상의 차이를 표상하는 학습 양상 선호도와 민족학적 변수를 조사하고, 미국에 온 이후에 나타난 학습 양상에 대한 차이 지각적 변화를 알아보는 것입니다.

이 연구에서 얻어진 결과는 테네시 대학교 뿐만 아니라, 아마도 전 테네시 주와 미국 전역의 고등 교육 기관에서, 이들 교육 기관에서의 영어를 제 2언어로 사용하는 학생들에 대한 장외의 학습의 효과 증진에 기여 할 것입니다.

익명성과 비밀성을 유지하기 위하여, 참여자의 이름은 언급되지 않을 것입니다. 더 나아가, 통계적 분석도 개개인의 응답이 아닌 네 문화 집단을 기준으로 하여 이루어 질 것입니다.

많은 시간을 니 주셔서 소중한 질문지를 완성하신 후, 함께 부착된 봉투에 봉합하시어 어느 우편함에나 넣어 주십시오. 귀하의 도움과 협조는 진심으로 감사히 여겨 질 것입니다. 응답물은 좋은 각지를 위해서 매우 중요한 학생들의 학습 양상을 파악하는 연구에 도움이 될 것입니다.

만약 이 연구나 또는 귀하의 연구 참여에 대한 질문이 있으시면, 언제든지 아무 꺼리낌없이 연구자에게 연락하여 주시기 바랍니다.

Sincerely

Torpong J. Goodson

APPENDIX E

1611 Laurel Ave., Apt.#1221
Knoxville, TN 37916
(615) 521-0614

October 27, 1992

Dear

I believe that you already got my first questionnaire that I sent to you about 2-3 weeks ago. The questionnaire is a study dealing with the learning style preferences of East Asian (Chinese, Japanese, Korean, and Taiwanese) ESL (English as a Second Language) students. The purposes of the study are to investigate the learning style preferences and ethnographic variables that effect the differences in learning styles of these students, and to investigate self-perceived changes in learning styles since they came to the United States.

It is likely that you might have forgotten, had no chance to complete the survey, or lost it. This letter is to remind you that I have still been anticipating your responses to the survey which will greatly contribute to the effectiveness of teaching and learning of these college-level ESL students not only at The University of Tennessee at Knoxville, but perhaps higher educational institutions in the State of Tennessee and all over the United States.

I, hereby, emphasize and assure again that in order to maintain anonymity and confidentiality the names of the participants will not be mentioned at all in the study. In addition, the analysis will be based upon the four cultural groups, not upon individual responses.

Please take a few minutes to complete the enclosed follow-up survey. Your help and co-operation will be greatly appreciated. The answers will aid the researcher in finding the ways students learn, which, indeed, is very important to good teaching.

Please feel free to contact the researcher at any time if you have further questions about the project or about your participation in it.

Please disregard this follow-up survey if you have already responded and returned the first one before October 27, 1992.

Sincerely,

Torpong J. Goodson

APPENDIX F

Instructions

There are 5 questions for each learning style category in this questionnaire. The questions are grouped below according to each learning style. Each question you answer has a numerical value:

SA	A	U	D	SD
5	4	3	2	1

Fill in the blanks below with the numerical value of each answer. For example, if you answered Strongly Agree (SA) for question 6 (a visual question), write a number 5 (SA) on the blank next to question 6 below.

Visual

6 - 5

When you have completed all the numerical values for Visual, add the numbers. Multiply the answer by 2, and put the total in the appropriate blank.

Follow this process for each of the learning style categories. When you are finished, look at the scale at the bottom of the page; it will help you determine your major learning style preference(s), your minor learning style preference(s), and those learning style(s) that are negligible.

If you need help, please ask your teacher.

VISUAL

6 - _____
10 - _____
12 - _____
24 - _____
29 - _____

TOTAL _____ x 2 = _____ (Score)

AUDITORY

1 - _____
7 - _____
9 - _____
17 - _____
20 - _____

TOTAL _____ x 2 = _____ (Score)

KINESTHETIC

2 - _____
8 - _____
15 - _____
19 - _____
26 - _____

TOTAL _____ x 2 = _____ (Score)

TACTILE

11 - _____
14 - _____
16 - _____
22 - _____
25 - _____

TOTAL _____ x 2 = _____ (Score)

GROUP

3 - _____
4 - _____
5 - _____
21 - _____
23 - _____

TOTAL _____ x 2 = _____ (Score)

INDIVIDUAL

13 - _____
18 - _____
27 - _____
28 - _____
30 - _____

TOTAL _____ x 2 = _____ (Score)

Major Learning Style Preference
Minor Learning Style Preference
Negligible

38-50
25-37
0-24

APPENDIX G

SCORING FORM

Student # _____

Nationality _____

SA	A	U	D	SD
5	4	3	2	1

VISUAL		
Question#		Score
6	-	_____
10	-	_____
12	-	_____
24	-	_____
29	-	_____

Total: _____

AUDITORY		
Question#		Score
1	-	_____
7	-	_____
9	-	_____
17	-	_____
20	-	_____

Total: _____

KINESTHETIC		
Question#		Score
2	-	_____
8	-	_____
15	-	_____
19	-	_____
26	-	_____

Total: _____

TACTILE		
Question#		Score
11	-	_____
14	-	_____
16	-	_____
22	-	_____
25	-	_____

Total: _____

GROUP		
Question#		Score
3	-	_____
4	-	_____
5	-	_____
21	-	_____
23	-	_____

Total: _____

INDIVIDUAL		
Question#		Score
13	-	_____
18	-	_____
27	-	_____
28	-	_____
30	-	_____

Total: _____

Student's FIRST learning style preference = _____

Student's SECOND learning style preference = _____

Student's LAST learning style preference = _____

VITA

Torpong Jamtawee Goodson was born in Bangkok, Thailand on June 21, 1956. He graduated from Sathit Pathumwan Secondary School in 1973. In 1977, he received a Bachelor of Arts degree in English and German from Silpakorn University.

Torpong worked as an instructor of English and German at Sathit Pathumwan Secondary School for two years before he was granted a scholarship from Goethe-Institute, Germany. He attended the German Teacher Training program at Goethe-Institute, Munich, Germany for two and a half years. After receiving a Teacher of German Diploma in 1981, he went back to Thailand and served the government as an instructor in the Department of Western Languages, Faculty of Humanities, Srinakharinwirot University Pathumwan, Bangkok.

In September, 1985, he received an assistantship and came to the United States to enter graduate school at the College of Education, Illinois State University, Normal. While there, he worked as a graduate assistant in the Department of Reading. He received his Master of Science in Education degree in December 1986.

After continuing his teaching at Srinakharinwirot University Pathumwan for two years, Torpong returned to the United States to matriculate a doctoral degree program at the College of Education, The University of Tennessee, Knoxville.

At the end of his doctoral degree program, he was recognized for outstanding achievement in foreign language education. In August, 1993, he received the Doctor of Philosophy degree, majoring in education with specialization in foreign language/ESL education.