CHAPTER 2

Literature Review

Learning Styles have received much attention since the 1960s and the investigation of language learning styles has advanced our understanding of the processes learners use to develop their skills in a second or foreign language. We all know the emphasis on foreign language research had shifted from the teacher to the learner, and educational research had identified a number of factors that account for some of the differences in how students learn.

2.1 Definition

Language learning styles, being a student's preferred method or style of learning, have generated a great deal of attention and been the focus of many second language studies. Definitions of learning styles for foreign language learners are quoted in Table 1.

Table 1. Definition of Language Learning Styles

Author	Year	Definition
Claxton & Ralston	1978	"Consistent ways of responding and using stimuli in the context of learning"
Reid	1987	"Variations among learners in using one or more senses to understand, organize, and retain experience"
Ehrman & Oxford	1990	"Preferred or habitual patterns of mental functioning and dealing with new information"
Reid	1995	"An individual's natural, habitual, and preferred ways of absorbing, processing, and retaining new information and skills"
Maggioli	1996	"The way in which an individual processes new information"

Based on the definitions above, learning styles can be defined in many ways in terms of habits and information processing. Also by looking at the various definitions of learning style we can say that everyone's learning style is unique. For instance some students learn better by listening to the teacher, some by

discussions, others by working themselves, and so on. Simply learning styles are

different approaches or ways of learning.

There is confusion in theory and in practice on the difference between

learning styles and learning strategies; however, Reid (1995) defines learning

styles and strategies clearly as follows:

Learning strategies are: ... external skills that students use, often consciously, to
improve their learning ... that students can be taught and can enhance or expand
their existing learning strategies. Learning styles, in contrast, are internally based
characteristics, often not perceived or used consciously, that are the basis for the
intake and understanding of new information ... students can identify their
preferred learning styles and stretch those styles. (p. viii)

From the above definition of learning styles and strategies we can draw the

conclusion that a person's style affects the kinds of learning strategies that he or

she will use, or if one prefers certain strategies over others, this means that he/she

is probably using a particular learning style.

2.2 Dimensions of a Learning Style

To truly focus on the students' language learning as educators we should

know our learners and factors that influence their learning. There are many factors

influencing language learning. Age, gender, risk-taking, self-esteem, motivation,

aptitude, anxiety, learning strategies and learning styles are some of the factors

that affect language learning.

If we take a close look at learning styles we can see that they have some

sub-factors that determine learning styles and also there are different ways to

classify learning styles. When determining a learning style, it is important to

consider both the internal and external factors impacting on the learner.

Clark (2000) categorizes learning styles into three general groups:

perceptual modality, information processing, and personality models. Reiff (1992),

mentioned some of the broad factors that affect learning style "It is obvious that

people learn differently and at different paces because of their biological and

psychological differences"

2.2.1 Perceptual modality

Perceptual modalities are those aspects of learning that are physiological in

nature (i.e. auditory, visual, kinesthetic. and tactile) and define biologically based

reactions to our physical environment and represent the way we most efficiently

adopt data. Understanding our perceptual style will help us seek information

arranged in a way we can process most directly.

Reid's PLSPS is an example for the perceptual modality learning style.

2.2.2 Information processing

Information processing is the cognitive component of learning or how one

acquires knowledge. This acquisition of knowledge involves how the learner

perceives, organizes, stores and recalls information.

The first part of Kolb's Learning Style Inventory in which he describes the

process of learning is an example of the information progressing learning style.

2.2.3 Personality Models

Personality models involve the affective components of the learner that include his/her motivation, values, emotional preferences and decision-making styles.

The second part of Kolb's Learning Style Inventory in which he describes individual learning styles, Jung MBTI and Howard Gardner's multiple intelligences are an example for the personality models learning styles.

It is important for both learners and educators to consider the impact of each of these dimensions in order to optimize learning. These dimensions also need to be considered when determining or evaluating learning style measurement tools.

2.1 Factors Which Influence Learning Styles

Language learning actively involves utilization of the sensory channels (ears, eyes, and hands), i.e. the major part of the learning styles. Some learners prefer using one sensory channel over the others, while others prefer using a combination of all channels.

There are some factors affecting the choice of learning styles. MacIntyre (1994) affirms that the influence of these factors "may be more clearly understood through the attitudinal, motivational, and learning style differences generally associated with gender and ethnicity" (p.187). On the other hand, Oxford (1993)

focuses on more factors which are include motivation. gender, and cultural background, type of task, age, L2 stage and learning style.

2.3.1 Learning Styles and Gender

According to some studies, the gender of the students makes a significant difference in learning a second or foreign language (Belenky, 1986; Dunn 1996; Pengiran-Jadid, 1998). All studies which examined gender in the use of language learning styles reported that significant sex differences almost always occurred.

Belenky's (1986) study of learning styles according to gender shows that learning styles vary by gender. Men are more abstract learners. women have more anxiety about study success; men are more intuitive, women are more analytical; women are more organized and so on.

Most of the earlier research showed significant differences between males and females in the choice of the learning style preference.

Pengiran-Jadid (1998) substantiated that girls' preferences were significantly different from boys' preferences in the areas of motivation, structure, authority orientation, and kinesthetic modality. Boys had stronger tendencies toward being peer-oriented.

Table 2. Dunn's (1996) Summary of Learning Preference Differences between

Males and Females

Researcher (year)	Male preferences	Female preferences
Hong & Suh (1995)	Peer motivation	Persistence Self-motivation Teacher motivation
Honigsfeld (2001)	Kinesthetic Peer motivation	Self- and parent motivation Persistence Responsibility (conformity) Variety Teacher motivation
Jenkins (1991)	Kinesthetic	Persistence Structure Authority orientation Motivation
Jorge (1990)	Structure Tactual	Learning in several ways
Lam-Phoon (1986)	Sound Intake Warm temperatures Patterns and routines Learning with peers	Quiet No intake Cool temperatures Variety Learning alone
Lo (1994)	Late afternoon	Responsibility (conformity) Self-motivation Persistence

Researcher (year)	Male preferences	Female preferences
Marcus (1979)	Teacher motivation Learning alone	Responsibility (conformity) Parent or self-motivation
Mariash (1983)	Visual Tactile Kinesthetic Formal design Structure	Auditory Persistence Responsibility (conformity)
Pengiran-Jadid (1998)	Kinesthetic Peer motivation	Motivation Persistence Structure Authority orientation
Pizzo et al. (1990)	Sound	Quiet
Roberts (1984)	Tactile Adult motivation	Learning alone Morning Kinesthetic
Yong (1991)	Tactile Intake	-
Yong & McIntyre (1992)	Informal Design Mobility	Formal design No mobility

Dunn (1996) study indicated that girl students tended to be more auditory than boy students. And again in 1998 the study of Dunn and Griggs supported the study which had been done by Dunn 1996 and it indicated that boys and girls learn differently from each other and the perceptual learning styles of males are often visual, tactual, and kinesthetic. Boys tend to need more mobility than girls and function better in an informal environment. Generally, boys are peer-motivated. On the other hand, girls tend to be more auditory, need quiet place while studying, work best in a formal setting, and need less mobility.

2.3.2 Learning Styles and Culture

Cultural values can affect a learner's ideas about language learning. For instance, memorizing is believed to be important in some countries; for instance, until recently, second language teaching in Thailand and in most Asian countries was based on this approach. Moreover, in certain cultures learners may find it embarrassing if they are corrected and tend to remain silent for fear of losing face.

In the Thai culture, paying respect to parents, the elderly, and the teachers causes many learners to abstain from class participation. Preserving traditional knowledge in education is emphasized at almost all levels; the emphasis is greater than that placed on testing and questioning such knowledge.

Numerous studies have shown that ethnicity and culture have great influence on a preferred learning style used by language learners. In 1987 Reid's comparative study of college students (see table 3) learning English as a second

language reported significant cultural differences in auditory, visual, kinesthetic, tactile, individual and group learning styles among Thai, Chinese, Korean, Japanese, Arabs, Spanish. and Malay students. Reid found that participants strongly preferred kinesthetic and tactile learning and many cultures showed a negative preference for group learning. Thai students most preferred learning styles were kinesthetic and tactile and were significantly more kinesthetic and tactile than the Japanese students. Chinese and Arab students were strong visual learners. Japanese students were the least auditory of all learners and were significantly less auditory than Chinese and Arab Americans both of whom expressed a strong preference for auditory learning. English speakers rated group work lower than all other language groups and significantly lower than Malay speakers. She also found that almost none of the participants in her study chose group learning as a major learning preference. Reid's findings clearly showed learning styles preferences vary by culture. Reid (1987) study result can be seen below in table 3.

Table 3: Reid's (1987) Perceptual Learning Style preferences Results

Language (Number)	Learning Style Preferences		
	Major	Minor	Negative
Arabic (193)	Visual, Auditory Kinesthetic Tactile	Group Individual	None
Spanish (130)	Kinesthetic Tactile	Visual Auditory Individual	Group
Japanese (130)	None	Visual Tactile Auditory Kinesthetic Individual	Group
Malay (113)	Kinesthetic Tactile	Visual Auditory Individual Group	None
Chinese (90)	Visual Auditory Kinesthetic Tactile	Individual	Group
Korean (118)	Visual Auditory Kinesthetic Tactile	Individual	Group
Thai (47)	Kinesthetic Tactile	Visual Auditory Individual	Group
Indonesian (59)	Auditory Kinesthetic	Visual Tactile Individual	Group
English (153)	Auditory Kinesthetic	Visual Tactile Individual	Group

In their study, Auyeung and Sands (1997) compared accounting students

from Australia, Taiwan, and Hong Kong in terms of Kolb's Learning Styles

Inventory. Their findings show that the Taiwanese and Hong Kong students

generally focus on more abstract and reflective learning styles, while the

Australian students have more concrete and active learning styles.

Gay (1994) believes that knowledge of learning styles can help educators

promote educational balance:

"Educators must thoroughly understand how culture shapes learning
styles, teaching behaviors, and educational decisions. They must then develop a
variety of means to accomplish common learning outcomes that reflect the
preferences and styles of a wide variety of groups and individuals. By giving all
students more choices about how they will learn--choices that are compatible with
their cultural styles--none will be unduly advantaged or disadvantaged at the
procedural levels of learning. These choices will lead to closer parallelism (e.g.,
equity) in opportunities to learn and more comparability in students' achieving the
maximum of their own intellectual capabilities (e.g., excellence)." (p. 20).

Hilliard (1991) brings another aspect to the strong affect of the culture and claims

that people, who spend most of their time in the culture's core, where they are

surrounded by people just like themselves, are most likely to exhibit their culture's

ostensible learning style.

2.3.3. Learning Styles and Achievement

Understanding the learning styles of students is fundamental to individual

teaching approaches. Most researchers agree that students learn better if they are

placed in an educational environment that matches their preferred learning styles.

Domino (1979) found that "students receiving instruction which reflected their preferred learning styles scored higher on tests" (p. 5).

Dunn and Griggs (1998) mention some variables that vary significantly between groups and among individuals. The educational implications of these variables are important to fully comprehend and employ because they provide direction and structure for effective teaching strategies, especially for low achieving students.

Reid (1987) hypothesis that a mismatch between teaching and learning style causes learner failure, frustration and dimotivation while Felder in 1995 states very similar idea and he says matching teaching style with learning styles gives all learners an equal chance in the classroom and builds students self-confidence.

2.4 Learning Styles Identifiers

Some of researchers suggest learning style identifiers to determine and measure language learners learning styles. Some learning style identifiers can be seen more frequently than others. These are listed below:

a) Myers-Briggs Type Indicator (MBTI)

b) The Dunn and Dunn Learning-Style Model

c) Kolb's Experiential Learning Model

d) Gardner's Theory of Multiple Intelligences

e) Reid's Perceptual Learning Style

The five of the more often used learning style models and their key concepts are outlined below.

2.4.1 Myers-Briggs Type Indicator (MBTI)

The Myers-Briggs Type Indicator (MBTI) is one of the widely used instruments for personality type learning style.

There are six different kinds of self-report forms used (depending on the purpose) in administering the MBTI. The most widely used is a 126-item self-reporting questionnaire. The questions represent the respondents' preferences in the following four dimensions:

Extraversion (E)   versus   Introversion (I)

Sensing (S)   versus   Intuition (N)

Thinking (T)   versus   Feeling (F)

Judging (J)   versus   Perceiving (P)

A brief description of the four major dimensions is presented in table 4.

Table 4: The Dimensions of Myers-Briggs Type Indicator (MBTI) (Brightman, 2001)

Dimensions of MBTI	Explanation of Each Dimension	Explanation of Combined Dimensions
Extraversion	Action-oriented and tend to gain their energy from people and things	Examines what factors are likely to energize or motivate people to learn
Introversion	Gain their energy from their inner world of ideas and concepts. They tend to think reflectively before taking action.	
Sensing	Focus more on details and facts and rely on the five senses of taste, touch, sight, sound and smell.	Examines our preferred ways of perceiving information
Intuition	Seek out patterns and relationships in the facts they have gathered and tend to look at the "big picture."	
Thinking	Tend to base decisions on analysis, logic and principles with an impersonal approach.	The dimension that reveals how we prefer to make decisions
Feeling	Tend to focus on personal or social values and needs	
Judging	Tend to be decisive and like closure on tasks	Looks at our orientations toward the outer world

	Tend to be more spontaneous and	
Perceiving	like to seek more data before	
	taking action.	

Understanding one's preferences of learning styles strengths and weaknesses help learners use their learning styles more effectively.

2.4.2 The Dunn and Dunn Learning-Style Model

This model was first proposed in 1970 by Dr. Rita Dunn and her husband, Dr. Kenneth Dunn. The Dunns suggest that each learner has a unique style of learning with individual strengths and weaknesses. Dunn and Dunn learning style model has 5 main categories and 21 elements. A summary of these elements is provided below (Dunn, 2000).

1. **Environmental** (Sound, Light, Temperature, Design) The environmental strand refers to these elements: lighting, sound, temperature, and seating arrangement. For example, some people need to study in a cool and quiet room, and others cannot focus unless they have music playing and it is warm (sound and temperature elements).

2. **Emotionality** (Motivation, Persistence, Responsibility, Structure) This strand includes the following elements: motivation, persistence, responsibility, and structure. For example, some people must complete a project before they start

a new one, and others work best on multiple tasks at the same time (persistence element).

3. **Sociological** (Self, Pair, Peers, Team, Adult, Varied) The sociological strand represents elements related to how individuals learn in association with other people: (a) alone or with peers, (b) an authoritative adult or with a collegial colleague, and (c) learning in a variety of ways or routine patterns. For example, a number of people need to work alone when tackling a new and difficult subject, while others learn best when working with colleagues (learning alone or with peers' element).

4. **Physiological** (Perceptual, Intake, Time, Mobility) The elements in this strand are: perceptual (auditory, visual, tactual and kinesthetic), time-of-day energy levels, intake (eating or not while studying) and mobility (sitting still or moving around). For example, many people refer to themselves as night owls and early birds because they function best at night or in the morning.

5. **Psychological** (Global/Analytic, Hemisphericity, Impulsive/Reflective) The elements in this strand correspond to the following types of psychological processing: hemispheric, impulsive or reflective, and global versus analytic. The hemispheric element refers to left and right brain processing modes; the impulsive versus reflective style describes how some people leap before thinking and others scrutinize the situation before moving an inch. Global and analytic elements are unique in comparison to other elements because these two elements are made up of distinct clusters of elements found in the other four strands.

Each learner should be assessed to determine his/her learning style and find the best teaching style to match the learner's preference.

2.4.3 Kolb's Experiential Learning Model

Kolb's Experiential Learning Model was developed in 1984. Kolb believes that knowledge is created through the transformation of experience.

Kolb outlines four steps learning model where learners tend to predominately prefer one combination of perceiving and processing information. Kolb argues that all four abilities are required for effective learning to take place.

Table 5: Kolb and Fry on Learning Styles (Tennant 1996)

Learning style	Learning Characteristic	Description
Converge	Abstract conceptualization + active experimentation	Strong in practical application of ideas Can focus on hypo-deductive reasoning on specific problems Unemotional Has narrow interests
Diverge	Concrete experience + reflective observation	Strong in imaginative ability Good at generating ideas and seeing things from different perspectives Interested in people Broad cultural interests

Learning style	Learning Characteristic	Description
Assimilator	Abstract conceptualization + reflective observation	Strong ability to create theoretical models Excels in inductive reasoning Concerned with abstract concepts rather than people
Accommodator	Concrete experience + active experimentation	Greatest strength is doing things More of a risk taker Performs well when required to react to immediate circumstances Solves problems Intuitively

2.4.4 Gardner's Theory of Multiple Intelligences

Howard Gardner developed his Theory of Multiple Intelligences in 1983.

Gardner (1999) in his theory states that the traditional IQ testing is too limiting for

the general population and that there are different intelligences to test human

learning and potential. Gardner, in his theory of Multiple Intelligences suggests

that there are seven different ways of processing information and recently he has

added one more to the seven ways of processing information. . These eight ways

are related to eight different types of intelligence, and give rise to different

learning styles.

Silver, F., Strong, W. and Perini, M. (1997), make clear understanding of difference between multiple intelligence theory and learning style theory: Learning styles emphasize the different ways people think and feel as they solve problems, create products, and interact. The theory of multiple intelligences is an effort to understand how cultures and disciplines shape human potential. Learning styles are concerned with differences in the process of learning, whereas multiple intelligences center on the content and products of learning.

The eight intelligences that Gardner (1999) identified are:

1. **Bodily-kinesthetic intelligence:** the ability to use the body to express ideas and feelings and to solve problems. This includes such physical skills as coordination, flexibility, speed, and balance. You can help your students develop their bodily-kinesthetic intelligence by providing opportunities for physical challenges during the second/foreign language lesson.

2. **Intrapersonal intelligence:** the ability to understand yourself-your strengths, weaknesses, moods, desires, and intentions. This includes such skills as understanding how you are similar to or different from others, reminding yourself to do something, knowing about yourself as a language learner, and knowing how to handle your feelings, such as what to do and how to behave when you are angry or sad. You can help EFL students develop intrapersonal intelligence by letting them express their own preferences and help them understand their own styles of learning.

3. **Interpersonal intelligence:** the ability to understand another person's moods, feelings, motivations, and intentions. This includes such skills as

responding effectively to other people in some pragmatic way, such as getting students or colleagues to participate in a project. As an EFL teacher you can help students develop interpersonal intelligence through activities that involve them in solving problems and resolving conflict.

4. **Linguistic intelligence:** the ability to use words effectively both orally and in writing. This intelligence includes such skills as the abilities to remember information, to convince others to help you, and to talk about language itself. You can help students develop linguistic intelligence by creating a rich print environment; by providing things to look at, listen to, and write about; and by creating many opportunities for interaction among students and between the teacher and the students.

5. **Logical-mathematical intelligence:** the ability to use numbers effectively and reason well. This includes such skills as understanding the basic properties of numbers and principles of cause and effect, as well as the ability to predict, using simple machines. You can help students develop logical-mathematical intelligence by providing manipulative for experimentation with numbers and by using simple machines or computer programs to help children think about cause and effect.

6. **Musical intelligence:** the ability to sense rhythm, pitch, and melody. This includes such skills as the ability to recognize simple songs and to vary speed, tempo, and rhythm in simple melodies. You can help students develop musical intelligence by using tape recorders for listening, singing along, and learning new songs.

7. **Spatial intelligence:** the ability to sense form, space, color, line, and shape. It includes the ability to graphically represent visual or spatial ideas. You can help students develop spatial/visual intelligence by providing many opportunities for visual mapping activities and encouraging students to vary the arrangements of materials in space, such as by creating charts and bulletin boards.

8. **Naturalist intelligence:** the ability to recognize and classify plants, minerals, and animals, including rocks and grass, and all variety of flora and fauna. It is also the ability to recognize cultural artifacts like cars or sneakers. You can help your students develop their naturalist intelligence by focusing their attention on the world outside the classroom.

Gardner (1989) claims that "the intelligences very rarely operate independently. Rather, the intelligences are used concurrently and typically complement each other as individuals develop skills or solve problems".

Christison (1998) states that "each person has biological potential. We differ in the particular intelligence profiles with which we are born and the ways in which we develop them."

2.4.5 Reid's Study in Detail

Reid (1987) was one of the first researchers who focused on sensory mode preference when investigating the learning style preferences of non-native English speakers (NNS). She developed the Perceptual Learning Style Preference Survey

(PLSPS) which allows participants to self-identify their preferred perceptual learning styles from six categories: visual, auditory, kinesthetic, tactile, group, and individual learning. Since 1987 her PLSPS has been used by many teacher-researchers to help their students identify their individual perceptual learning styles.

Learning styles cannot be observed directly. We can only see behavior within specific situations, behavior influenced by both personal and situational factors as they interact during the individuals' perception of the situation.

"In order to find out about the learning styles a student may have, the teacher should either observe the student's behavior in carrying out the class or administer some kind of questionnaire in which students are asked to rate the way they learn best" (Maggioli, 1996).

In the present study, I tried to determine the learning styles of students with a questionnaire which was adopted from Reid (1998).

Reid report on a study she conducted to examine perceptual learning style preferences of English as Second Language (ESL) students who studied in United States, representing 98 countries. Reid developed a self-report questionnaire of 30 questions with randomly arranged statements (5 each) in six areas of learning style preference, the four perceptual sensory modalities of Dunn (visual, auditory, kinesthetic, and tactile) and two additional social modalities (individual and group learning). Reid classified variables into three categories: major, minor, and negligible (negative) learning style preferences. The survey was completed by 1,300 ESL students, whom 42 of them were Thai. Joy Reid (1987) found some significant cross-cultural differences in visual and auditory styles. By means of a

self-reporting questionnaire, the subjects rated their own preferences. The students

rated statements like, "When I read instructions, I learn them better," and "I learn

more when I make drawings as I study." on a five-point scale ranging from

"strongly agree" to "strongly disagree." Among Reid's results: Korean students

were significantly more visually oriented than native English-speaking Americans;

Japanese students were the least auditory students, and significantly less auditory

than Chinese and Arabic students. Reid also found that some of the preferences of

her subjects were a factor of gender, length of time spent in the US, academic

field of study, and level of education. Such findings underscore the importance of

recognizing learners' varying style preferences. but also of not assuming that they

are easily predicted by cultural/linguistic backgrounds alone.

Reid was one of the many researchers who thought recognizing learning style of

learners would help increase learners' awareness of their learning style increase,

teachers' awareness in terms of develop curriculum, design lesson plan, teaching

strategies and styles, materials etc.

According to Reid (1998), learning styles can be defined as unconsciously

preferred ways of learning that distinguish one learner from the other; in other

words, how people usually learn and what senses they prefer influence their

learning styles. Actually, people might have more than one learning style because

they might behave differently in dealing with different information, or in different

learning environments. Moreover, learning styles can not be determined strictly

because they exist on wide continuums instead of extreme points. Therefore, one

can not be categorized as having only one learning style. People might have more

than one or two learning styles. Finally, learning styles are considered to be value-neutral; that is, no one style is better than others; therefore, learners must be encouraged to stretch their learning styles to be more authorized in a variety of learning situations.

Reid's questionnaire was the survey I could use with the participants easily because the survey measures students' sensory and social learning styles. These perceptual styles are easier to observe comparing to information processing and personality model learning style.

During the course of writing this thesis, Reid emailed to me (October 1, 2004) saying that she was receiving a few emails every week asking permission to use her questionnaire. The questionnaire I have used is, therefore, a widely used learning style survey instrument.

2.5 Summary of Learning Styles Research

The concept of learning style has been examined extensively by educators since the 1960s within the field of teaching English as a Second Language. Survey of research into learning styles can be found in Reid (1995, 1998), which confines itself to a brief survey, with specific attention to the results relating to language learning in different cultures, age, achievement, gender etc. Park (1996) investigated the learning styles of English learners (Armenian, Korean, Mexican Vietnamese) in secondary schools 9th to 12th grade by using Reid's (1998) Perceptual learning style questionnaire. In Park's study, students exhibited either major or minor preferences for all perceptual learning styles. Among different

ethnic groups' significant differences had been found in preferences for group and individual learning. All students exhibited major preferences for kinesthetic learning.

Leen (2001) also used Reid's questionnaires (1998) and collected data from 1996 to 2001. According to her findings. science students were major kinesthetic learners, and they were close to being major visual, auditory, tactile, group and individual learners.

Ellison in 1993 used the same questionnaire and looked for the impact of culture on students' perceptual learning style.