



Completed Research Report

On

MODELS OF ENGLISH LEARNING STYLES FOR INDUSTRIAL
EDUCATION STUDENTS AT KING MONGKUT'S INSTITUTE
OF TECHNOLOGY LADKRABANG



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Research Title : Models of English Learning Styles for Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang

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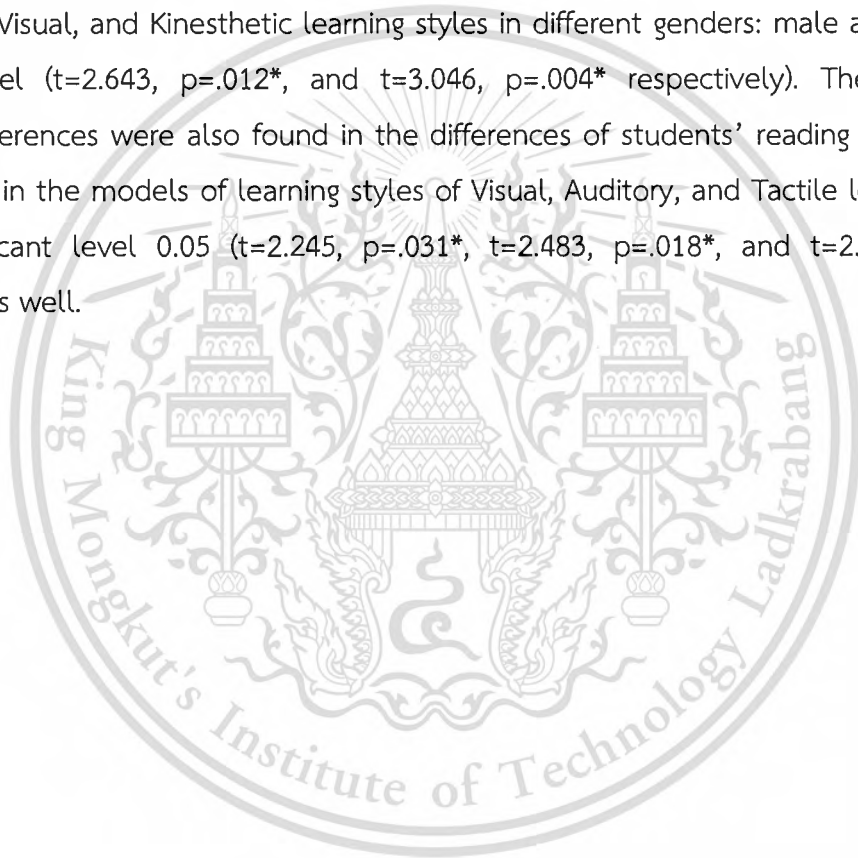
ABSTRACT

The objectives of this study were: (1) to study models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang. (2) To compare models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang with different genders and English reading abilities. The sample were all 40 second year undergraduate Industrial Education Students in the field of Applied Arts, majoring in English and enrolling the course of "Reading2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL). The research instrument used in collecting the data was a five-point Likert scale, adopted from Reid's Survey (Reid, 1987). The quantitative data were analyzed using statistic programs: arithmetic mean, standard deviation, and Independent Sample t-test. The hypothesis testing was set at the 0.05 level of significance. Results of this study revealed that:

(1) Visual learning style was the only learning style model that all students used at major levels (\bar{X} =37.60), while other categories of learning styles: Auditory, Kinesthetic, Tactile, Group, and Individual learning styles, students appeared to use them only at minor levels (\bar{X} =35.80, 34.95, 35.90, 35.60, and 28.85 respectively). Interestingly, there were no Negligible levels on any students' learning styles models.

(2) Male students had different levels of learning styles models from those of female students in three categories: Visual, Kinesthetic and Group learning styles. That is, all these three categories of learning styles (Visual, Kinesthetic and Group learning styles), male

students used them in Major levels (\bar{X} =42.00, 39.14, 38.57, respectively) while female students used them in Minor levels (\bar{X} =36.67, 34.06, 34.97, respectively). Interestingly, this study also illustrated that high reading ability students had different levels of learning styles models from those of mid reading ability students in three categories: Visual, Auditory, and Tactile learning styles. That is, all these three categories of learning styles (Visual, Auditory, and Tactile learning styles), high reading ability students used these styles in Major levels (\bar{X} =39.64, 37.88, 37.53, respectively), while mid reading ability students used them in Minor levels (\bar{X} =36.09, 34.26, 34.70, respectively). Last but not least, this study also found that there were statistically significant differences in the models of learning styles in the categories of Visual, and Kinesthetic learning styles in different genders: male and female at the 0.05 level ($t=2.643$, $p=.012^*$, and $t=3.046$, $p=.004^*$ respectively). The statistically significant differences were also found in the differences of students' reading ability levels: high and mid in the models of learning styles of Visual, Auditory, and Tactile learning styles at the significant level 0.05 ($t=2.245$, $p=.031^*$, $t=2.483$, $p=.018^*$, and $t=2.258$, $p=.030^*$ respectively)as well.



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Associate Professor Dr. Pattaraporn Thampradit
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CHAPTER 1

INTRODUCTION

1.1 Statement and Significance of the Problems

In our globalization, it's without doubt to say that learning English is more and more important for students, not only for their study, but for their daily life, their future career, and taking part in the contemporary globalization trend (Hou 2009). Moreover, English has been used to communicate, exchange knowledge, thoughts, cultures and traditions, and gain advanced technologies. It also has been used as a significant tool to compete in world markets and businesses, to negotiate either in political and social issues, to get better understanding and have mutual corroboration among countries. At present, we can obviously see that there are more than fifty countries have selected English as their official language and have used it in varied areas of government and business (CIA 2008).

In Thailand, Office of Education Council also realizes how significant English is. The Second Decade of Education Reform (2011-2018) has focused on know-how of educational improvement by enhancing 3% per year of English ability and foreign language with economic significance (Office of Education Council 2011). Foreign languages, like English plays an essential role in learning for specific purposes : career, education or personal interest (Banbang 2010). According to the Thai National Education Act, it can be summarized that the curriculum in organizing learning process should indicate to the learner's needs (Singhasiri, Darasawang and Srimavin 2004). Meanwhile, the government's educational policy has focused on reform of learning process. Student-centered learning is an approach to education emphasizing on the students' needs, rather than those of others involved in the educational process, such as teachers and administrators. This approach has many implications for the design of curriculum, course content, and interactivity of courses (www.wikipedia.org, retrieved on 22 February 2011).

If educational and business institutions in the twenty-first century expect to prepare an potential and high-performing manpower for global economy, technology education must be realized as fundamental to accomplishing manpower competencies (Bybee and Starkweather

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2006). Finding a ways in which students may learn the most competent and efficient manner is a serious concern of education (Oklahoma State Department of Education 1993). An important component of learning style theory is the belief that teachers are able to facilitate their students effectively by understanding how they learn best, or recognizing students' preferred leaning styles (Ellis 1989)

Furthermore, Considering the Sub-Committees on Learning Reform of the Thai National Education Commission and the Thai Ministry of Education, we can see that they have removed the teacher-centeredness from Thai education, and supplanted it with learner-centeredness thorough learning reform implemented in 1999, after the teacher-centered approach had been examined as unsuccessful with Thai education since 1996(Phungphol 2005). Learners were shifted to be the central players and the roles of teachers were switched as facilitators, not classroom disciplinarians in education any longer. Under the Thai National Education Act (NEA) of B.E. 2542 in 1999:

Within this paradigm, education should be based on the principle that all learners are capable of learning and self-development, and are regarded as being most important. At the same time the teaching-learning process should aim at enabling the learners to develop themselves at their own pace and to the best of their potentiality (1999: section 22).

Consequently, the learners have been the central figure in conducting research on language teaching and learning procedures until now (Satta-Udom 2007). One of the teachers' role is to adapt the idea of the learners-centered approach in teaching and learning language (Nunan 1988; Rost & Ross 1991). Students' requirement is to be aware of their learning styles since making students aware of earning styles may stimulate them to realize the importance of appropriate learning styles for discipline or subject, and also, such style may used to change learning situations (Poon Teng Fatt 1993). According to Pask (1977), knowing one's learning styles is significant in learning. Consequently, student should be made aware of their learning styles. It is the responsibility of teachers to guarantee this. As a result, this kind of survey may be just what teachers need to assess the learning styles of their students and then make accessible the result to the students.

Universally, it is known that there is a diversity of learning styles and teachers have the responsibility to adapt their teaching strategies to student learning styles and disposition in order to better facilitate learning (Sander 1990). Students are distinctive in their characters,

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(Reid, 1987; Gardner, 1989; Dunn, 2000) Each student perceives and processes information in different ways. Felder (1995) claims that students, who feel uncomfortable about their learning in class rooms may ascribe their failures to false discretions. This leads to give up learning in a particular class.

Unquestionably, the way teachers teach should meet the way students learn. Educators' concern should be students' learning styles; moreover they are able to adapt their teaching styles to match students' learning styles (Poon Teng Fatt 2000). Likewise, teaching and learning styles refers to teachers and learners' behaviors or actions displaying in learning exchange (Heimlich and Norland 2002). Learning styles are incorporated with ,affective, temperamental, and motivational structure of total human personality Keefe and ferrel 1990).

Thus, there is a need to investigate the model of learning style differences between students to understand the application of an individual's unique learning styles. Consciousness of the learning styles of the learners's will assist the teacher, instructor, adult educator, trainers, course designers, program and training developers to evolve a curriculum addressing individual learning needs (Pallapu 2008). Baldwin and Sabry (2003) stated that “research continue to build a strong case for the impact of learning styles in better understanding how learners learn and thus how to support them in their task” (p.329). Hence, investigating in students' learning styles should be a significant way to realize different models of students' learning styles in order that teachers can enhance their students to learn at their own pace and to the best of their potentiality.

1.2 Objectives of the Study

1.2.1 To study models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang

1.2.2 To compare models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang with different genders and English reading abilities.

1.3 Scopes of the study

1.3.1 Population

The population is the second year undergraduate Industrial Education Students studying during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL).

1.3.2 Sample

The sample is all 40 second year undergraduate Industrial Education Students in the field of Applied Arts, majoring in English and enrolling the course of "Reading2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL).

1.3.3 Variables Used in This Study

1.3.3.1 Independent Variables are students' personal factors: genders: male and female, and levels of English reading abilities: high, mid, low.

1.3.3.2 Dependent Variables are students' models of English learning styles

1.3.4 Research Questions

1.3.4.1 What are the models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang?

1.3.4.2 Do KMITL Industrial Education Students with different genders and different English reading abilities appear to have the same models of English learning styles?

1.4 Definitions or Terms Used

1.4.1 Learning Styles: an individual's natural or habitual pattern of acquiring and processing information in learning situations

1.4.2 Models of Learning Styles: six categories of the framework of the Perceptual Learning Styles: visual learning styles, auditory learning styles, tactile learning styles, kinesthetic learning styles, group styles and individual learning styles (Reid, 1987)

1.4.2.1 Visual Learning Style: the style used in order to learn more effectively through visual perception.

1.4.2.2 Auditory Learning Style: the style used in order to learn more effectively through auditory perception.

1.4.2.3 Kinesthetic Learning Style: the style used in order to learn more effectively through whole-body movement.

1.4.2.4 Tactile Learning Style: the style used in order to learn more effectively through touch and hand-on activity.

1.4.2.5 Group Learning Style: the style used in order to learn more effectively through working with others.

1.4.2.6 Individual Learning Style: the style used in order to learn more effectively through working alone.

1.4.3 Genders: male and female of all 40 second year undergraduate Industrial Education Students in the field of Applied Arts, majoring in English and enrolling the course of “Reading 2” during the first semester of 2012 academic year at King Mongkut’s Institute of Technology Ladkrabang (KMITL).

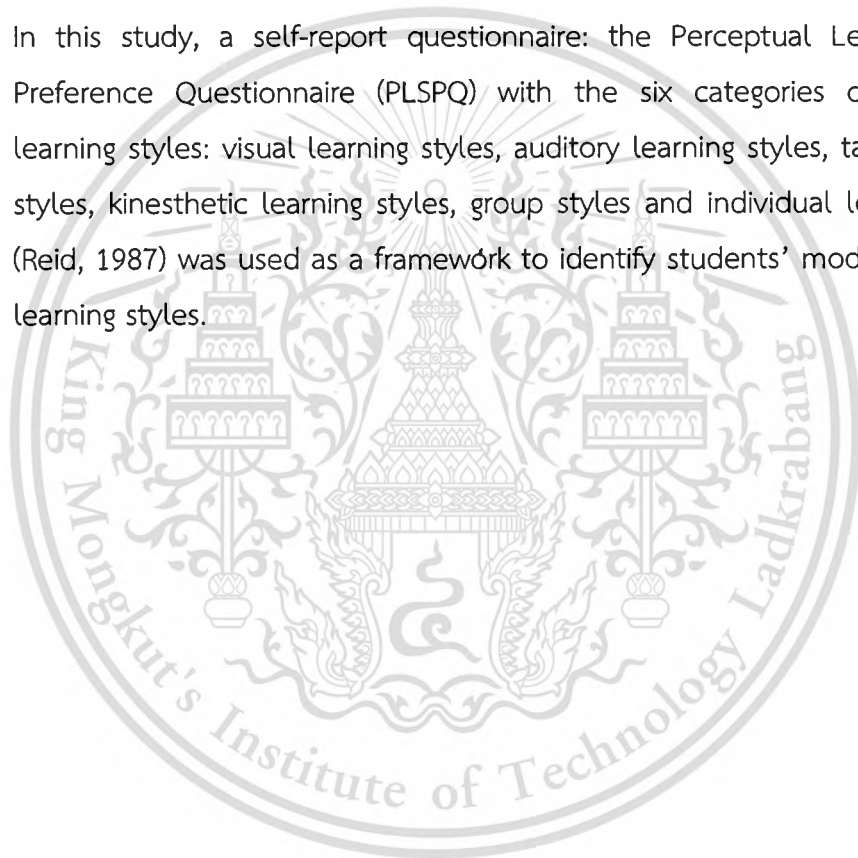
1.4.3 Levels of English reading abilities: three levels of English reading abilities: high, mid, low were designed according to the results of “Reading 2” Final Examination. This examination was a multiple-choice test of various passages in a diversity of content areas, in which results were used as criterion to determine the reading ability of students in relation to a task performed in a limited time frame. In order to pass the test, students had to be able to read and comprehend the passages including answering comprehension questions very quickly and in an accurate manner.

Based on the students’ results of “Reading 2” Final Examination which were issued during the first semester of the 2012 academic year, the students recommended as *high English reading ability level* in this study had to possess the following characteristics: they had to obtain a score of at least 75%. In contrast, the students recommended as *mid English reading ability level* had to obtain a score of 65-74%, and the students

recommended as *low English reading ability level* had to obtain a score of no more than 64%.

1.5 Scopes or Limitation of the study

- 1.5.1 This study focused only on investigating the models of learning styles of 40 second-year KMITL Industrial Education students enrolling in “Reading 2” during the first semester of the 2012 academic year.
- 1.5.2 This study focuses on only Thai: cannot be generalized to other languages.
- 1.5.3 The sample in this study deals with small sample size.
- 1.5.4 In this study, a self-report questionnaire: the Perceptual Learning Styles Preference Questionnaire (PLSPQ) with the six categories of perceptual learning styles: visual learning styles, auditory learning styles, tactile learning styles, kinesthetic learning styles, group styles and individual learning styles (Reid, 1987) was used as a framework to identify students’ models of English learning styles.



CHAPTER 2

LITERATURE REVIEW

This chapter is divided into six sections. The first section presents the definition of learning styles. The second section describes fundamentals of learning styles. The third section describes approaches to learning styles. The fourth section deals with categories of learning styles. The fifth section states learning styles in the classroom. The last section involves related researches.

2.1 Definition of Learning Styles

Learning style is an individual's natural or habitual pattern of acquiring and processing information in learning situations. A core concept is that individuals differ in how they learn (Gardner, 1995). The idea of individualized learning styles originated in the 1970s, and has greatly influenced education.

Learning styles also qualified as cognitive, affective, and psychological behavior which show how learner perceive, interact with, and respond to the learning environment (NASSP 1979). Learning styles can be referred to as “stable, pervasive characteristics of individual, expressed through the interaction of one's behaviors and personality as one approaches a learning task” (Reid 1987). Learning styles are the general approach, for example, global or analytic, auditory or visual, which students use in acquiring a new language or learning any other subject. These styles are “the overall pattern that give general direction to learning behavior” (Cornett 1983, p.9). Elements of learning styles showed in the research literature as early as 1982. That is, Koch (1998) certified that at the beginning of 1950s and 1960s, researchers distinguished learning and teaching theories focusing on each individual learner's learning needs, while in the late 1960s and the early of 1970s. The term 'learning styles' was likely first used by Thelen (1954) in discovering the dynamics of groups at work.

Learning styles are acceptable as various approaches or ways of learning. They involve educating methods, particular to an individual which are presumed to allow that individual to learn best. Most people prefer an identifiable method of interacting with, taking in, and processing stimuli or information. Based on this concept, the idea of individualized "learning styles" originated in the 1970s, and acquired "enormous popularity" (Wikipedia, 2011).

Obviously, learning styles is also the biological and developmentally imposed set of the characteristics which cause the same teaching wonderful for some and terrible for others (Dunn and Griggs 1988, p.3). Learning styles are not dichotomous (black or white, present or absent), but mostly operate on a continuum or on multiple, intersecting continua. For example, a person might be more extroverted than introverted, or more closure-oriented than open, or equally visual and auditory but less kinesthetic and tactile. Few of any people could be classified as having all or nothing in any of these categories (Ehrman 1996)

Proponents of the use of learning styles in education recommend that teachers assess the learning styles of their students and adapt their classroom methods to best fit each student's learning style. Although there is ample evidence for differences in individual thinking and ways of processing various types of information, few studies have reliably tested the validity of using learning styles in education. Critics say there is no evidence that identifying an individual student's learning style produces better outcomes. There is evidence of empirical and pedagogical problems related to the use of learning tasks to "correspond to differences in a one-to-one fashion" (Klein, 2003). Well-designed studies contradict the widespread "meshing hypothesis", that a student will learn best if taught in a method deemed appropriate for the student's learning style (Pashler, McDaniel, Rohrer, Bjork, 2008).

Many studies on learning styles began as early as 1892 (Keefe 1987; Keefe & Jenkins 1984). Carbo, Dunn and Dunn (1986) suggested that one of the major developments in the field of education was the research and identification of learning styles. Lemire (2000) pointed out that extensive attention to individual learning styles was a major movement in education for the past 25 years. Jonassen and Grabowski (1993) argued that "An outgrowth of the interest in cognitive styles has been the evolution of

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learning styles, which are general tendencies to prefer to process information in different ways” (p. 233). Kolb and Kolb (2003) indicated that learning styles have become a key factor in providing an effective learning experience.

Loo (2002) indicated that learning style is “the consistent way in which a learner responds to or interacts with stimuli in the learning context” (p. 252). Irvine and York (1996) provided a common definition learning styles with three styles such as (a) cognitive, (b) affective, and (c) physiological (p. 6). Dunn and Dunn (1998) defined a learning style as the way each person begins to concentrate on, process, and retain new and arduous information. P. Smith and Dalton (2005) defined a learning style as “the typical way an individual likes to go about learning” (p. 5). They also pointed out that because everyone is different there is possibility of having various different learning styles.

Johnson and Orwig (1998) defined learning style as “the unique collection of individual skills and preferences which effect how a person perceives, gathers, and processes information” (para. 2). Karges-Bone (1998) set learning styles into two modalities; (a) visual-spatial modality enhancers and (b) auditory-language modality enhancers. A partial list of visual-spatial modality enhancers utilizes materials as whiteboard, colored markers, overhead projectors, computer, and workstation with printer. The auditory-language modality enhancers include the classroom library, biography center, books, and tapes. Felder (1996) defined learning styles are the “characteristic strengths and preferences in the ways they take in and process information” (p. 18).

Campbell et al. (1996) defined learning style as “a certain specified pattern of behavior according to which the individual approaches learning experience”. Kolb (1984) defined learning style as “the process by which the individual retains new information or new skills”. Dunn et al. (1981) defined learning style as “a way in which the individual takes in new information and develops new skills”. Zapalska (2007) defined the learning style as “the preference or predisposition of an individual to perceive and process information in particular way or combination of ways” (p. 8).

Cottrell (2001) denoted that learning is a process to assist us to encode information from memory and to transmit information from one part of brain to another and to form associations between new and known materials. Yannibelli, Godoy and Amandi (2006) stated that “Learning styles encapsulate the preferences of students, regarding how they learn” (p. 55). Briggs (2000) accepted that analyzing learning styles of individuals has always been a debate and investigated frequently in the past. Smith (2002)

supported that it is a general experience for all individual to learn and perceive in a variety of ways. Meanwhile, Krätzig and Arbuthnott (2006) demonstrated that “a person’s learning style is hypothesized to be a combination of cognitive, affective, and psychological characteristics that explain how that individual interacts with his or her environment” (p. 238).

2.2 Fundamentals of Learning Styles

It is believed that some fundamental characteristics can be found in learning styles, on which they are based (Reid, 1995, xiii). These are:

1. every person, student and teacher alike, has a learning style and learning strengths and weaknesses;
2. learning styles exist on wide continuums; although they are described as opposites;
3. learning styles are value-neutral; that is, no one style is better than others (although clearly some students with some learning styles function better in a US school system that values some learning styles over others);
4. students must be encouraged to “stretch” their learning styles so that they will be more empowered in a variety of learning situations;
5. often, students’ strategies are linked to their learning styles;
6. teachers should allow their students to become aware of their learning strengths and weaknesses.

However, students prefer method of learning depending on the task and situation. A student's learning style is varied, it is not fixed. A student can have several different ways of learning depending on what is being learnt. Learning styles changes tasks. A student’s learning style for one task may not be the same for a different task, subject or topic. As a result, learning style has three main aspects:

1. How students perceive information
2. How students process information
3. How students organize and present information

2.3 Approaches to Learning Styles

2.3.1 Cognitive Approach to Learning Styles

Anthony Grasha and Sheryl Reichmann, in 1974, formulated the Grasha-Reichmann Learning Style Scale. It was developed to analyze the attitudes of students and how they approach learning. The test was originally designed for college students. Grasha's background is in cognitive processes and coping techniques. The concepts of various learning styles are as follows:

avoidant, participative, competitive, collaborative, dependent, and independent. The conclusion of this approach was to provide teachers with insight on how to approach instructional plans (Grasha, Anthony, 1996). It also aims to explain why aptitude tests, school grades, and classroom performance often fail to identify real ability.

2.3.2 NASSP Approach to Learning Style

The NASSP (The US National Association of Secondary School Principals) Approach to learning style believes that learning style is a gestalt that tells us how a student learns and prefers to learn. "Learning styles are characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment." (Keefe, 1979). There are three broad categories of learning style characteristics:

2.3.2.1 Cognitive styles are preferred ways of perception, organization and retention.

2.3.2.2 Affective styles represent the motivational dimensions of the learning personality; each learner has a personal motivational approach.

2.3.2.3 Physiological styles are traits deriving from a person's gender, health and nutrition, and reaction to school physical surroundings, such as preferences for levels of light, sound, and temperature.

These styles are hypothetical constructs aiming to explain the learning and teaching process. "Because learning is an internal process, it has taken place only when we observe a relatively stable change in learner behavior resulting from what has been experienced. Similarly, learning style reflects underlying learning behavior. We can

recognize the learning style of an individual student only by observing his or her behavior” (Keefe, 1979).

2.4 Categories of Learning Styles

Since learning styles can be referred to as an individual's natural, habitual and preferred way(s) of absorbing, processing, and retaining new information and skills. These learning styles persist, regardless of teaching method and content areas. The learning styles may be divided into three major categories: cognitive learning styles, sensory learning styles and affective/temperament learning styles.

2.4.1 Cognitive Learning Styles

Cognitive Learning Styles may be divided as follows:

2.4.1.1 Field Independent and Field Dependent Learning Styles

Field Independent learner learns more effectively step by step, or sequentially beginning with analyzing facts and proceeding to ideas. However, field dependent learner learns more effectively in context, holistically, intuitively, and is especially sensitive to human relationships and interactions.

2.4.1.2 Analytic and Global Learning Styles

Analytic learner: learns more effectively individually, prefers setting own goals and responds to a sequential, linear, step-by-step presentation of material whereas global learner learns more effectively through concrete experience, and by interactions with other people.

2.4.1.3 Reflective and Impulsive Learning Styles

Reflective learner learns more effectively when she or he has time to consider options before responding while impulsive learner learns more effectively when she or he is able to respond immediately and to take risks (often more fluent language learner).

2.4.1.4 Kolb Experiential Learning Model

Kolb Experiential Learning Model includes four kinds of learners: converger learner, diverger learner, assimilator learner, and accommodator learner.

Converger learner learns more effectively when she or he is able to perceive abstractly and to process actively. Diverger learner learns more effectively when she or he is able to perceive concretely and to process reflectively. Assimilator learner learns more effectively when she or he is able to perceive abstractly and to process reflectively. Accommodator learner learns more effectively when she or he is able to perceive concretely and to process actively.

2.4.2 Sensory Learning Styles

There are many ways to explain Sensory Learning Styles, but one of the well-known Sensory Learning Styles is likely to be in the forms of Perceptual Learning Styles.

Perceptual Learning Styles divided learners into six categories: visual learner, auditory learner, tactile learner, kinesthetic learner, group learner, and individual learner.

Visual learner learns more effectively through the eyes (seeing). Auditory learner learns more effectively through the ear (hearing). Tactile learner learns more effectively through touch (hands-on). Kinesthetic learner learns more effectively through complete body experience. Group learner learns more effectively through working with others learns. Individual learner learns more effectively through working alone (Reid, 1987).

2.4.2 Affective or Temperament Learning Styles

2.4.2.1 Myers-Briggs Type Indicator (MBTI)

Myers-Briggs Type Indicator divided learners into eight categories: extraverted learner, introverted learner, sensing learner, intuition learner, thinking learner, feeling learner, judging learner, perceiving learner

Extraverted learner: learns more effectively through concrete experience, contacts with and relationships with others. Introverted learner learns more effectively in individual, independent learning situations. Sensing learner learns more effectively from reports of observable facts. Intuition learner learns more effectively from meaningful experiences. Thinking learner learns more effectively from impersonal and logical circumstances. Feeling learner learns more effectively from personalized circumstances. Judging learner learns more effectively by reflection, deduction, analysis, and process that involve closure. Perceiving learner learns more effectively through negotiation, feeling, and inductive processes that postpone closure

2.4.2.2 Tolerance of Ambiguity Styles

Tolerance of Ambiguity Styles divided learners into two categories: Ambiguity- Tolerance learner and Ambiguity- intolerance learner.

Ambiguity- Tolerance learner learns more effectively when opportunities for experiment and risk, as well as interaction, are present while ambiguity-intolerance learner learns more effectively when in less flexible, less risky, more structured situations.

2.4.2.3 Right and Left brained Learning Styles

Right and Left brained Learning Styles divided learners into two categories: right-brained learner and left-Brained learner. Right-Brained learner learns more effectively through visual analytic, reflective, self-reliant learning whereas left-Brained learner learns more effectively through auditory, global, impulsive, interactive learning

The scope and depth of learning styles vary because it seems impossible to limit a person's learning style only with a certain dimension, that is, it cannot be said that a person is only visual, audio or kinesthetic. Ehrman and Oxford (1995) assert "Naturally, not everyone fits neatly into one or another of these categories to the exclusion of the other, parallel categories (e.g. visual, auditory, and kinesthetic)" (p. 69). This view is also supported by Willing (1988) who asserts that "At any period in the history of methodological fashions, there is usually the covert assumption of one particular learning style as basic. [However,] what makes the current interest in learning styles new is that several different ways of learning are now held to be equally valid" (p. 6). Kroonenberg (1995) adds another point why there is so much interest in learning styles currently by stating that all students ought to be given extensive opportunities to learn through their preferred style, but "they also need to open the idea of 'style flex' – that is students should be encouraged to diversify their style preferences" (p. 80).

2.5 Learning styles in the classroom

Various researchers believe that learning styles should have an effect on the classroom so they have attempted to hypothesize ways in which learning style theory can be used in the classroom.

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Although learning styles will inevitably differ among students in the classroom, two scholars (Dunn, & Dunn, 1978) indicate that teachers should try to make changes in their classroom that will be beneficial to every learning style. Some of these changes include room redesign, and the development of small-group techniques, and the development of Contract Activity Packages.¹ Redesigning the classroom involves locating dividers that can be used to arrange the room creatively (such as having different learning stations and instructional areas), clearing the floor area, and incorporating student thoughts and ideas into the design of the classroom.

Their so-called "Contract Activity Packages" are educational plans that use: 1) a clear statement of the learning need; 2) multisensory resources (auditory, visual, tactile, kinesthetic); 3) activities through which the newly-mastered information can be used creatively; 4) the sharing of creative projects within small groups; 5) at least three small-group techniques; 6) a pre-test, a self-test, and a post-test.

Other scholar is Sprenger (Sprenger, 2003). She bases her work on three premises: 1) Teachers can be learners, and learners teachers. We are all both. 2) Everyone can learn under the right circumstances. 3) Learning is fun! Make it appealing. She details various ways of teaching, visual, auditory, or tactile/kinesthetic. Methods for visual learners include ensuring that students can see words written, using pictures, and drawing time lines for events. Methods for auditory learners include repeating words aloud, small-group discussion, debates, listening to books on tape, oral reports, and oral interpretation. Methods for tactile/kinesthetic learners include hands-on activities (experiments, etc.), projects, frequent breaks to allow movement, visual aids, role play, and field trips.¹ By using a variety of teaching methods from each of these categories, teachers cater to different learning styles at once, and improve learning by challenging students to learn in different ways.

James W. Keefe and John M. Jenkins (2000; 2008) have incorporated learning style assessment as a basic component in their "Personalized Instruction" model of schooling. Six basic elements constitute the culture and context of personalized instruction. The cultural components (teacher role, student learning characteristics, and collegial relationships) establish the foundation of personalization and ensure that the school prizes a caring and collaborative environment. The contextual factors—interactivity, flexible scheduling, and authentic assessment—establish the structure of personalization. These six elements constitute the state of the art in personalized instruction.^{cial use.}

Cognitive and learning style analysis has a special role in the process of personalizing instruction. Style elements are relatively persistent qualities in the behavior of individual learners. They reflect genetic coding, personality, development, motivation, and environmental adaptation. Second only to the more flexible teacher role, the assessment of student learning style, more than any other element, establishes the foundation for a personalized approach to schooling: for student advisement and placement, for appropriate retraining of student cognitive skills, for adaptive instructional strategy, and for the authentic evaluation of learning. Some learners respond best in instructional environments based on an analysis of their perceptual and environmental style preferences. Most individualized and personalized teaching methods reflect this point of view. Other learners, however, need help to function successfully in any learning environment. If a youngster cannot cope under conventional instruction, enhancing his cognitive skills may make successful achievement possible. Many of the student learning problems that learning style diagnosis attempts to solve relate directly to elements of the human information processing system. Processes such as attention, perception and memory, and operations such as integration and retrieval of information are internal to the system. Any hope for improving student learning necessarily involves an understanding and application of information processing theory. Learning style assessment is an important window to understanding and managing this process.

Some research evaluating teaching styles and learning styles, however, has found that congruent groups have no significant differences in achievement from incongruent groups (Spoon & Schell, 1998). Furthermore, learning style in this study varied by demography, specifically by age, suggesting a change in learning style as one gets older and acquires more experience. While significant age differences did occur, as well as no experimental manipulation of classroom assignment, the findings do call into question the aim of congruent teaching-learning styles in the classroom.

2.5 Related Researches

2.5.1 International Related Researches

Willing (1988) conducted a research with respect to the learning styles in adult migrant education. To serve the purposes of the survey a new questionnaire was developed because the already existing ones had some deficiencies such as having a too narrow focus or being complex in their format and wording. The questionnaire consisted of thirty items on the first page, the second page included fifteen learning strategies, and the third page included items regarding individual biographical results. 517 learners, from over thirty ethnic groups participated the study, but only five of the ethnic groups (Vietnamese, Chinese, Arabic speakers, South Americans, and Polish/Czech speakers) were large enough for statistical analysis.

Regarding the analysis of the results Willing (1988) stated that it was impossible to make “statistically valid cross-comparisons relating a question to more than one biographical variable at a time” (p. 122). For this reason, the individual characteristics of the participants were considered separately. The results indicated that there are cultural differences with respect to the learning style preferences of the learners. Though the mean of the item “I like to study grammar” was lower than expected, all learners from the distinct cultures reflected that they liked studying grammar. However, the Arabic learners were the ones who preferred grammar the most because 65 % of them ranked this item as the “best”.

The item related to the use of cassettes at home revealed that the Vietnamese were the only learners who preferred this method. Chinese, in contrast, seemed to “have little confidence in it” (Willing, 1988, p. 130). When the same question was considered with respect to the length of residence in Australia it was revealed that the variation was not big enough to be statistically meaningful. The results with regard to sex indicated that males tend to write everything in their notebooks more than females. Though, moderately both visual and kinesthetic modalities were female preferences.

Reid (1987) conducted a research with respect to the learning style preferences of ESL learners. The overall results of the research indicated that ESL learners

strongly preferred kinesthetic and tactile learning styles when compared to audio and visual. In addition, most groups showed a negative preference for group learning.

The general findings offered by Reid (1987) are as the following:

1. The perceptual learning style preferences of ESL learners differed significantly in several ways from native speakers of English. For instance, native speakers of English were less tactile in their learning style preferences than all non- native speakers and were significantly less kinesthetic than Arabic, Chinese, Korean and Spanish speakers.
2. The learning style preferences of ESL learners from different language, different educational and cultural backgrounds sometimes differed significantly from each other. For instance, the Korean students were found to be the most visual in their learning style preferences. They were significantly more visual than the US and Japanese learners. Japanese learners, on the other hand, appeared to be the least auditory of all learners and were significantly less auditory than Arabic and Chinese learners.
3. When some other factors such as sex, length of time spent in the United States, major field, and level of education were analyzed, the results indicated that there were significant differences in their relationships to various learning style preferences. In the analysis of results with respect to level of education and gender, it was found that graduate students showed a significantly greater preference for visual and tactile learning than the undergraduates. The undergraduates were significantly more auditory oriented than graduates. Both groups strongly preferred kinesthetic and tactile learning. Males preferred visual and tactile learning significantly more often than females.
4. The data obtained from the study also indicated that as ESL learners adapt to the US academic environment, some changes and extensions of learning styles might take place. To illustrate, the longer the students had lived in the United States, the more auditory their preference became. Learners who had been in the US

more than three years were significantly more auditory in their learning style preference than those who had been in the US for shorter periods of time. This finding indicates that learners adapt their learning style preferences to the learning environment they are involved.

Stebbins (1995, p. 110) replicated Reid's study (Reid, 1987) in order to obtain more information about the similarities and differences in learning styles between ESL learners and Native English Speakers (NESs). He lists the areas in which the results paralleled with Reid's results. Kinesthetic and tactile learning styles were strongly preferred by ESL students when compared to NESs. His comparison were as follows: (1) group learning was again chosen as the least preferred mode by most NESs and ESL students; the only sample group in the current study to indicate a preference for the group learning mode were those ESL students with low (300-349) TOEFL scores. (2) Spanish speakers repeated their strong preference for kinesthetic mode. (3) Arabic and Korean students showed stability in their choice of multiple learning styles. (4) Japanese students again did not strongly identify any style preferences.

2.5.2 Domestic Related Researches

Banbang (2010) investigated 232 undergraduate students consisting of 118 Engineering students and 114 Applied Science students at King Mongkut's University of Technology North Bangkok, Thailand. The results showed that the undergraduate Engineering students preferred visual learning styles as the most preference style while Applied Science undergraduate students preferred kinesthetic learning styles as the most preference style.

Boonsuk (2008) surveyed 433 Pondok schools students in Mattayom Suksa 5 who were learning English as a foreign language in southern Thailand. Most students preferred the group learning styles as their major learning styles. The results also showed that the students from the three school chose individual learning styles as the lowest preference.

Simsek (2005) explored 134 Thai secondary school students of English as a foreign language. Most students preferred kinesthetic style while individual was the negligible learning style.

Singhasiri, Darasawang and Srimavin (2004) studied learning styles of 63 first year Achitech student who enrolled in English courses in the first semester (2011) at King Mongkut's University of Technology Thonburi, Thailand. Most students were concrete learners who like to learn in groups through games and pictures. They also like to learn by doing.

Watanasin (2004) studied 20 students who were taking "Business English Oral Communication" course at Chulalongkorn University. It found that students preferred group learning style and nearly preferred visual, auditory and tactile & kinesthetic learning styles.

Buranarek (2002) studied learning styles of 346 certificate vocational education students in Thailand's eastern vocational college. It found that students preferred participant learning styles, dependent learning styles was second priority and the avoidance learning style was the lowest.

Tepsatit (1998) studied learning styles of agricultural students and teaching styles of the instructors in the agriculture and technology colleges within the eastern region group, including the relationship between the students learning styles and the teaching styles that students preferred. The finding revealed that the level of the students learning styles was found to be high in participation, dependent, and collaborative. The teaching styles that instructors used and the students preferred were in between the teacher and students center. There was no significant difference on such learning styles when classified by sex, class and college at the .05 level of confidence, but the relationship was found between the learning and teaching styles that the students preferred.

Nimmanpisut (1992) surveyed 1,181 students at the certificate in vocational education level in colleges under the jurisdiction of the Department of Vocational Education. He found that students used visual, auditory, group and individual learning styles at the moderate level; they used kinesthetic and tactile learning styles at the low level. Students in every major field of study used auditory, group and individual learning styles at the moderate level and used kinesthetic learning style at the low level; the visual and tactile learning styles were used differently by students in each major field

of study at the moderate and low level. Students with different major fields of study used different visual, kinesthetic, tactile, group and individual learning styles.

Sattacomkul (1992) studied 794 students in seven private universities in Thailand. The result showed that private university students favored the participant learning styles the most, collaborative learning style was second priority and the avoidance learning style was the least. It also found that the lower class-level students favored participant learning style while the upper class-level students favored Collaborative learning style. For different areas of study, social sciences students and applied sciences student favored participant learning style while humanities student favored the collaborative learning style. Students with high academic achievement and with lower academic achievement favored participant learning style while students with medium academic achievement favored the collaborative learning style.



CHAPTER 3

METHODOLOGY AND RESULTS

The purpose of this study is to investigate the models of English learning styles of all the second year undergraduate Industrial Education students in the field of Applied Arts, majoring in English and enrolling the course of “Reading 2” during the first semester of 2012 academic year at King Mongkut’s Institute of Technology Ladkrabang (KMITL). Furthermore, this study is also designed to investigate whether all the students with different genders and different English reading abilities: high, mid, low appear to have the same models of English learning styles or not.

This chapter is divided into two main sections. The first section is methodology and the second section is results. The methodology section is consisted of four main parts. The first is population and sample. The second is the instrument of this study. The third is validity and reliability of the questionnaire and the fourth is data analysis and statistical procedures. The second section, the results, presents the research findings of the two main questions: (1) what are the models of English learning styles of Industrial Education Students at King Mongkut’s Institute of Technology Ladkrabang? (2) Do KMITL Industrial Education Students with different genders and different English reading abilities appear to have the same models of English learning styles?

3.1 Methodology

3.1.1 Population and Sample

3.1.1.1 Population

The population of this study is the second year undergraduate Industrial Education students studying during the first semester of 2012 academic year at King Mongkut’s Institute of Technology Ladkrabang (KMITL).

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3.1.1.2 Sample

The sample is all 40 second year undergraduate Industrial Education students in the field of Applied Arts, majoring in English and enrolling the course of “Reading 2” during the first semester of 2012 academic year at King Mongkut’s Institute of Technology Ladkrabang (KMITL).

3.1.2 Instrument

3.1.2.1 The Questionnaire

The research instrument was the questionnaire. It consisted of two sections. The first section was students' demographic information that included students' gender and reading abilities: high, mid, low. The second section consisted of the Models of Learning Styles Questionnaire adapted from Reid’s framework (Reid 1984). This questionnaire was used to interpret the students' models of English learning styles when they study “Reading 2” during the first semester of 2012 academic year. It is also currently widespread used by various educators for understanding the English learning process and gaining information about students' background and learning styles. (Reid 1987, 1998; Boonsuk, 2008; Simsek, 2005).

According to the questionnaire, there were six categories concerned with the models of English learning styles: visual, auditory, kinesthetic, tactile, group learning, and individual learning styles (Reid 1987). Of all these six categories, there were 30 statements all together. Five statements were represented for each category. That is, the visual learning style was signified in statements 6, 10, 12, 24, and 29. The auditory learning style was signified in statements 1, 7, 9, 17, and 20. The kinesthetic learning style was signified in statements 2, 8, 15, 19, and 26, while the tactile learning style was signified in statements 11, 14, 16, 22, and 25. Group learning style was signified in statements 3, 4, 5, 21, and 23, while individual learning style was signified in statements 13, 18, 27, 28, and 30. As a result, each statement described particular type of model of learning styles the students’ used when they learnt English language. For example, “I prefer to learn by doing something in class,” “When I read instruction, I remember them better,” or “When I work alone, I learn better.”

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All the students were also asked to respond to each statement quickly, without thinking too much about the statements, and they were asked not to change their responses after they marked them.

In addition, before answering the questionnaire, the students were emphasized to mark each statement that was best applied to their models when learning English. They also had to respond to the 30 statements in the questionnaire on the basis of a 5-point Likert scale ranging from strongly agree to strongly disagree, as shown in Figure 3.1:

Figure 3.1: A 5-point Likert Scale

A 5-point Likert Scale	
Scale	Point
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

3.1.2.2 Criteria for interpreting Variables

In this study, the criteria for interpreting the Mean Score were presented according to the classification of the levels of learning styles models of Reid (Reid, 1987). Reid classified the learning styles models into three levels: major, minor, and negligible. A major learning styles model is indicated by the scores from 38-50. A minor learning styles model ranges from 25 to 37, whereas the scores for negligible learning styles model are from 0 to 24, as shown in table 3.1:

Table 3.1 Three Levels of Students' Learning Styles Models

(Adapted from Reid, 1987)

Levels of Learning Styles Models	Scores
Major	38 - 50
Minor	25 - 37
Negligible	0 - 24

3.1.3 Validity and Reliability of the Questionnaire

Every enterprise was used to evaluate the validity of the research instrument to derive the effectual information. For example, questionnaire's construction and development were not only based on the literature review and related research, but also were submitted to three scholars for reexamining instrument's validity and reliability before handing out for pilot project.

3.1.4 Data Analysis and Statistical Procedures

This research was a descriptive research using the questionnaires. All data were analyzed through computer program to find the results. To answer the research questions, statistical procedures were employed as follows:

3.1.4.1 Arithmetic Mean and Standard Deviation: To answer research question number one, the data from the PLSPQ were analyzed through the computer program to reveal the arithmetic mean and the standard deviation. The arithmetic mean provided average levels of the models of English learning styles the students used. Furthermore, descriptive statistics was used to classified the students according to their models of English learning styles preference into three categories: major, minor, and negligible:

3.1.4.2 Independent Sample T-test: To answer research question number two, the Independent Sample t-test was used to determine the level of significance if any of differences in the frequency mean do occur among the models of English learning styles of students from different reading abilities and genders.

3.2 Results

The second section, the results, indicates the research findings of the two main questions: (1) what are the models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang? (2) Do KMITL Industrial Education Students with different genders and different English reading abilities appear to have the same models of English learning styles?

The data were analyzed by comparing the values of arithmetic mean, and standard deviation of students' models of learning styles. Independent Sample t-test was used to determine any significance differences at the significance level of 0.05. The findings of the study were presented according to the two research questions mentioned as follows:

3.2.1 Students' Demographic Background

Table 3.2: The Students' Demographic Background

Students' Demographic Background		N=40	Percent
Gender			
Male		7	17.5
Female		33	82.5
Total		40	100
Reading Ability levels			
High		17	42.5
Mid		23	57.5
Low		-	0.00
Total		40	100

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Table 3.2 showed the students' demographic background by genders and their reading ability levels. All 40 second year undergraduate Industrial Education Students in the field of Applied Arts, majoring in English and enrolling the course of "Reading2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL) were 7 male students (17.5%) and 23 female students (82.5%). Interestingly, it showed that there were 17 students having high reading ability level (42.5%) and 23 students having mid reading ability levels (57.5%). No students having low reading ability level.

3.2 Result of Research Question One: What are the models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang?

To answer the research question one, the data were shown in Table 3.3 below:

Table 3.3: Models of Students' Learning Styles

Categories of Learning Styles	Mean	SD.	Levels of Learning Styles
Visual	37.60	5.21	Major
Auditory	35.80	4.85	Minor
Kinesthetic	34.95	4.41	Minor
Tactile	35.90	4.13	Minor
Group	35.60	4.78	Minor
Individual	28.85	4.79	Minor

Table 3.3 indicated that the models of learning styles of all 40 second year undergraduate Industrial Education students in the field of Applied Arts, majoring in English and enrolling the course of "Reading 2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL) were in major levels only on Visual learning style (\bar{X} =37.60), while other categories of learning styles: Auditory, Kinesthetic, Tactile, Group, and Individual learning styles, students appeared to use them

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only at minor levels (\bar{X} =35.80, 34.95, 35.90, 35.60, and 28.85 respectively). Interestingly, there were no Negligible levels on any students' learning styles models.

3.3 Result of Research Question Two: Do KMITL Industrial Education Students with different genders and different English reading abilities appear to have the same models of English learning styles?

To answer this research question and to investigate whether the six learning styles were influenced by genders: male and female, and by the levels of English reading abilities: high and mid or not, the results were demonstrated as in Table 3.4 and Table 3.5 below:

Table 3.4: Models of Students' Learning Styles Classified by Genders

Categories of Learning Styles	Genders	N=40	Mean	SD.	Levels of Learning Styles
Visual	Male	7	42.00	6.33	Major
	Female	33	36.67	4.52	Minor
Auditory	Male	7	37.14	3.98	Minor
	Female	33	35.52	5.03	Minor
Kinesthetic	Male	7	39.14	4.14	Major
	Female	33	34.06	3.98	Minor
Tactile	Male	7	36.86	4.30	Minor
	Female	33	35.70	4.17	Minor
Group	Male	7	38.57	5.97	Major
	Female	33	34.97	4.34	Minor
Individual	Male	7	29.15	1.95	Minor
	Female	33	28.79	5.22	Minor

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Table 3.4 illustrated that male students had different levels of learning styles models from those of female students in three categories: Visual, Kinesthetic and Group learning styles. That is, all these three categories of learning styles (Visual, Kinesthetic and Group learning styles), male students used them in Major levels (\bar{X} =42.00, 39.14, 38.57, respectively) while female students used them in Minor levels (\bar{X} =36.67, 34.06, 34.97, respectively). However, in the other three categories: Auditory, Tactile, and Individual learning styles models, both male and female used all these categories in Minor levels.

Table 3.5: Models of Students' Learning Styles Classified by RA (English Reading Abilities)

Categories of Learning Styles	RA	N=40	Mean	SD.	Levels of Learning Styles
Visual	High	7	39.64	4.76	Major
	Mid	33	36.09	5.10	Minor
Auditory	High	7	37.88	4.66	Major
	Mid	33	34.26	4.48	Minor
Kinesthetic	High	7	36.35	3.41	Minor
	Mid	33	33.91	4.84	Minor
Tactile	High	7	37.53	3.57	Major
	Mid	33	34.70	4.16	Minor
Group	High	7	35.88	3.57	Minor
	Mid	33	35.39	5.58	Minor
Individual	High	7	30.00	3.00	Minor
	Mid	33	28.00	5.69	Minor

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Table 3.5 showed that high reading ability students had different levels of learning styles models from those of mid reading ability students in three categories: Visual, Auditory, and Tactile learning styles. That is, all these three categories of learning styles (Visual, Auditory, and Tactile learning styles), high reading ability students used these styles in Major levels (\bar{X} =39.64, 37.88, 37.53, respectively), while mid reading ability students used them in Minor levels (\bar{X} =36.09, 34.26, 34.70, respectively). However, in the other three categories: Kinesthetic, Group, and Individual learning styles, both male and female used all these categories in Minor levels.



CHAPTER 4

DISCUSSION AND COMMENTS

The purposes of this study were: (1) to study models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang, and (2) to compare models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang with different genders and English reading abilities. The samples were all 40 second year undergraduate Industrial Education Students in the field of Applied Arts, majoring in English and enrolling the course of "Reading2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL).

The research instruments for this study consisted of a two-part questionnaire. The first part of the survey gathered students' individual demographic background while the second part consisted of the Models of Learning Styles Questionnaire adapted from Reid's framework (Reid 1984). There were six categories concerned with the models of English learning styles: visual, auditory, kinesthetic, tactile, group learning, and individual learning styles. Of all these six categories, there were 30 statements all together, and five statements were represented for each category. The data were analyzed by using statistical procedures: arithmetic mean, standard deviation, and Independent Sample t-test.

Of all 40 subjects chosen to participate, there were 7 male students (17.5%) and 23 female students (82.5%). Interestingly, it showed that there were 17 students having high reading ability level (42.5%) and 23 students having mid reading ability levels (57.5%). No students having low reading ability level.

This study also indicated that the students used Visual learning styles model in major levels (\bar{X} =37.60), while other models of learning styles: Auditory, Kinesthetic, Tactile, Group, and Individual learning styles, students appeared to use them only at minor levels (\bar{X} =35.80, 34.95, 35.90, 35.60, and 28.85 respectively). Interestingly, there were no Negligible levels on any students' learning styles models. Furthermore, in order to clarify how students used the models of learning styles in each categories: visual (VLS), auditory (ALS), kinesthetic (KLS), tactile (TLS), group (GLS), and individual learning styles (ILS), Figure 4.1 to Figure 4.6) were illustrated in details, as follows:

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Figure 4.1: Models of Visual Learning Styles (VLS) Used by Students

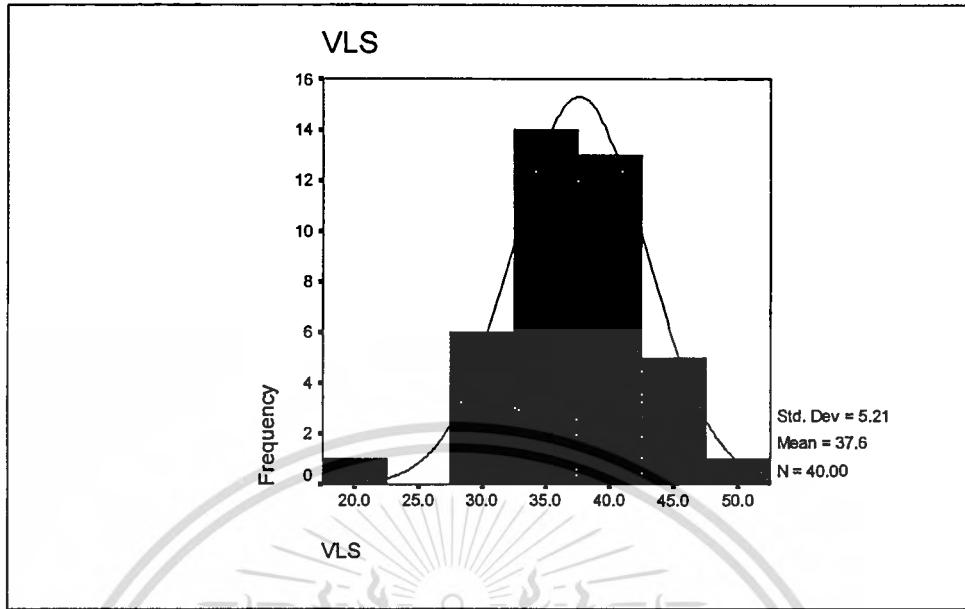


Figure 4.2: Models of Auditory Learning Styles (ALS) Used by Students

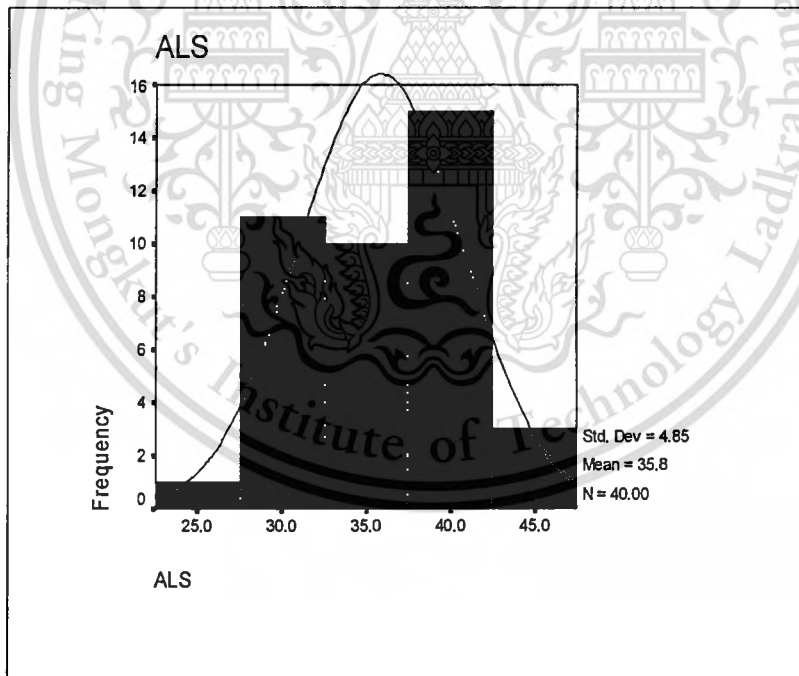


Figure 4.3: Models of Kinesthetic Learning Styles (KLS) Used by Students

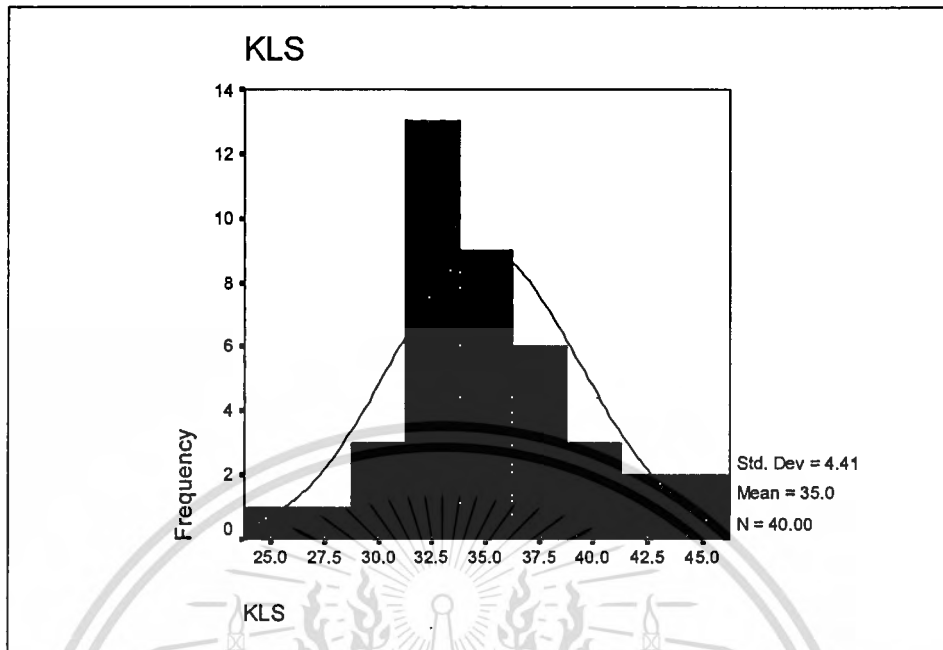


Figure 4.4: Models of Tactile Learning Styles (TLS) Used by Students

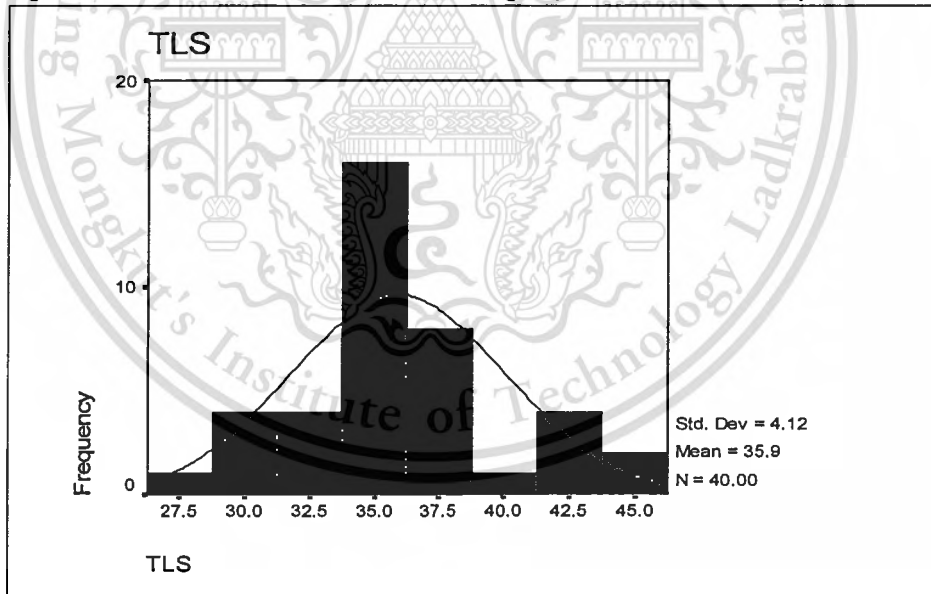


Figure 4.5: Models of Group Learning Styles (GLS) Used by Students

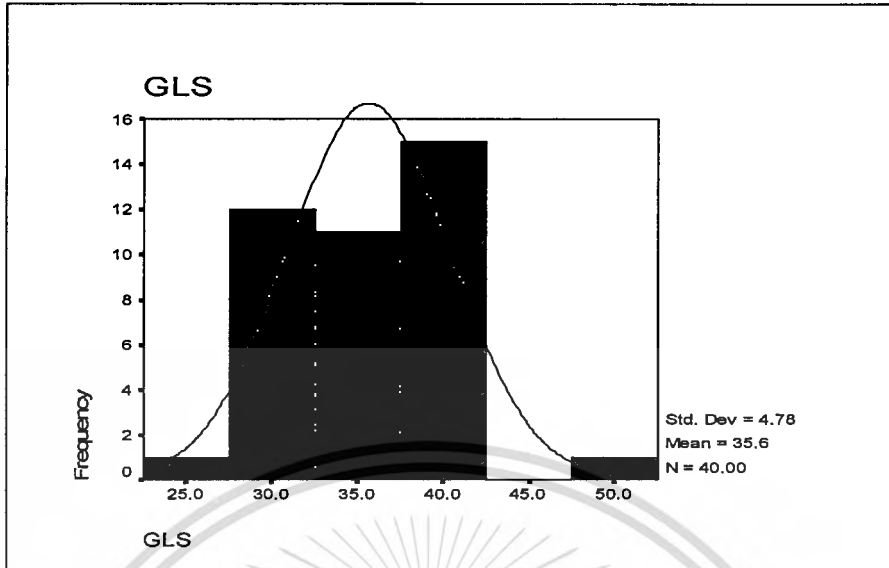
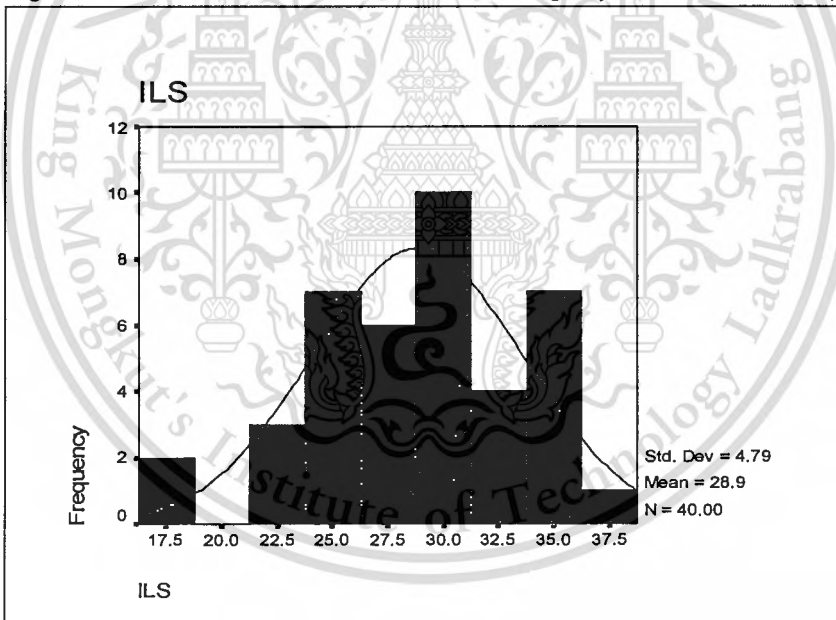


Figure 4.6: Models of Individual Learning Styles (ILS) Used by Students



In addition, due to the results of research question two, male students had different levels of learning styles models from those of female students in three categories: Visual, Kinesthetic and Group learning styles. That is, all these three categories of learning styles (Visual, Kinesthetic and Group learning styles), male students used them in Major levels (\bar{X} = 42.00, 39.14, 38.57, respectively) while female students used them in Minor levels (\bar{X} = 36.67, 34.06, 34.97, respectively). In contrast, high reading ability students had different

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levels of learning styles models from those of mid reading ability students in three categories: Visual, Auditory, and Tactile learning styles. That is, all these three categories of learning styles (Visual, Auditory, and Tactile learning styles), high reading ability students used these styles in Major levels (\bar{X} =39.64, 37.88, 37.53, respectively), while mid reading ability students used them in Minor levels (\bar{X} =36.09, 34.26, 34.70, respectively).

Furthermore, in comparing the models of students learning styles' mean scores between genders: male and female, and reading ability levels: high and mid, the results appeared fascinatingly. That is, there were statistically significant differences in the models of learning styles in the categories of Visual, and Kinesthetic learning styles in different genders: male and female ($t=2.643$, $p=.012^*$, and $t=3.046$, $p=.004^*$ respectively). The statistically significant differences were also found in the differences of students' reading ability levels: high and mid in the models of learning styles of Visual, Auditory, and Tactile learning styles ($t=2.245$, $p=.031^*$, $t=2.483$, $p=.018^*$, and $t=2.258$, $p=.030^*$ respectively).

Table 4.1: Comparison of Students' models of Learning Styles: Genders VS RA

* Significant Level at 0.05 ($p \leq .05$)

Last but not least, the result of this study was compatible with Lin et al. (Lin et al, 2006). They found that students used Visual learning styles at high levels. This result was exactly the same as the result of this study, which found that students used the models of Visual learning styles at Major levels. Also, some of the results of this study were paralleled

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with those of many researchers (Stebbins, 1995; Simsek, 2005 and Banbang 2010). For example, Stebbins (Stebbins, 1995) found that Kinesthetic and Tactile learning styles were used by ESL students when compared to NESs. In this study, compared to female, Kinesthetic also used more for male students, and compared to students with mid reading ability, the high reading ability students also used Tactile learning styles models much more than those with mid reading ability levels. All of these results seem to imply that in teaching learning activities, students have some similar patterns in learning English language. It's the teacher's duty to find and integrate the learning styles for students in order that students will be able to apply either each style of learning or a combination of learning styles suitably for their content areas and diversity of classroom situations.



CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Chapter five presents conclusion, and recommendations. The recommendations are for pedagogical as well as further studies. The details are as follows.

The purposes of this study were: (1) to study models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang, and (2) to compare models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang with different genders and English reading abilities. The samples were all 40 second year undergraduate Industrial Education Students in the field of Applied Arts, majoring in English and enrolling the course of "Reading2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL). The research instruments for this study consisted of a two-part questionnaire. The first part of the survey gathered students' individual demographic background while the second part consisted of the Models of Learning Styles Questionnaire adapted from Reid's framework (Reid 1984). The data were analyzed by using statistical procedures: arithmetic mean, standard deviation, and Independent Sample t-test.

5.1 Conclusion

The research questions of the study were: (1) what are the models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang? (2) Do KMITL Industrial Education Students with different genders and different English reading abilities appear to have the same models of English learning styles?

5.1.1 Research Results

According to the students' demographic background by genders and their reading ability levels, of all 40 students, there were 7 male students (17.5%) and 23

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female students (82.5%). Interestingly, it showed that there were 17 students having high reading ability level (42.5%) and 23 students having mid reading ability levels (57.5%). No students having low reading ability level.

Research Question One: What are the models of English learning styles of Industrial Education Students at King Mongkut's Institute of Technology Ladkrabang?

The result showed that Visual learning style was the only learning style model that all 40 second year undergraduate Industrial Education students in the field of Applied Arts, majoring in English and enrolling the course of "Reading 2" during the first semester of 2012 academic year at King Mongkut's Institute of Technology Ladkrabang (KMITL) were used in major levels (\bar{X} =37.60), while other categories of learning styles: Auditory, Kinesthetic, Tactile, Group, and Individual learning styles, students appeared to use them only at minor levels (\bar{X} =35.80, 34.95, 35.90, 35.60; and 28.85 respectively). Interestingly, there were no Negligible levels on any students' learning styles models.

Research Question Two: Do KMITL Industrial Education Students with different genders and different English reading abilities appear to have the same models of English learning styles?

The results indicated that male students had different levels of learning styles models from those of female students in three categories: Visual, Kinesthetic and Group learning styles. That is, all these three categories of learning styles (Visual, Kinesthetic and Group learning styles), male students used them in Major levels (\bar{X} =42.00, 39.14, 38.57, respectively) while female students used them in Minor levels (\bar{X} =36.67, 34.06, 34.97, respectively). However, in the other three categories: Auditory, Tactile, and Individual learning styles models, both male and female used all these categories in Minor levels.

Furthermore, this study also illustrated that high reading ability students had different levels of learning styles models from those of mid reading ability students in three categories: Visual, Auditory, and Tactile learning styles. That is, all these three categories of learning styles (Visual, Auditory, and Tactile learning styles), high reading ability students used these styles in Major levels (\bar{X} =39.64, 37.88, 37.53, respectively), while mid reading ability students used them in Minor levels (\bar{X} =36.09, 34.26, 34.70,

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respectively). However, in the other three categories: Kinesthetic, Group, and Individual learning styles, both male and female used all these categories in Minor levels.

Interestingly, this study also found that there were statistically significant differences in the models of learning styles in the categories of Visual, and Kinesthetic learning styles in different genders: male and female ($t=2.643$, $p=.012^*$, and $t=3.046$, $p=.004^*$ respectively) at the significant level 0.05. The statistically significant differences were also found in the differences of students' reading ability levels: high and mid in the models of learning styles of Visual, Auditory, and Tactile learning styles ($t=2.245$, $p=.031^*$, $t=2.483$, $p=.018^*$, and $t=2.258$, $p=.030^*$ respectively) at the significant level 0.05 as well.

5.2 Recommendations

5.2.1 Recommendations for Pedagogical Instruction

The results of this study could indicate that in teaching learning activities, it's plausible that students have some similar patterns in learning English language. It's the teacher's duty to find and integrate the learning styles for students in order that students will be able to apply either each style of learning or a combination of learning styles suitably for their content areas and diversity of classroom situations. Additionally, teachers need to assess the learning styles of their students and then make accessible the students' learning results. Consequently, teachers should aware that:

- 1) Teachers should design the curricula by integrating all models of learning styles into the course with various activities.
- 2) Teachers should provide classroom activities with the teaching methods that match students' models of learning styles, and be able to guide students to be able to use all six categories of learning styles at a high frequency level.
- 3) Teachers should try to enhance students to develop their skills in choosing learning styles suitably for their content areas, needs, interest, and classroom diversity in order that students will be able to understand and apply knowledge of what they are studying without difficulty.

4) The use or lack of use of different learning styles might affect the academic success of the student. If the course of study in school is to be meaningful, then it is essential that teachers should lead students to be aware of how they learn and about the factors affecting their own learning, thinking, and problem solving. Teachers, therefore, should observe students when they learn language to determine students' strengths and weaknesses, which in turn, will help provide effective and appropriate learning instruction.

5.2.2 Recommendations for Further Studies

The suggestions for further studies are as follows.

- 1) Further research should be focused on both teaching styles and learning styles as it can significantly enhance academic achievements.
- 2) Further study should be considered both on learning styles and learning strategies as they both have the effect in students' learning.
- 3) Further research should compare students' learning styles across disciplines.
- 4) Further investigation should be done by using both qualitative and quantitative methods.
- 5) Further studies dealing with (a) models of learning styles of Thai students with different ages and grade levels and (b) the relationship between students' models of learning styles and their comprehension should be conducted in order to further verify the findings of the present study.

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APPENDIX A

Scoring Sheet

<p>Visual</p> <p>6 - _____</p> <p>10 - _____</p> <p>12 - _____</p> <p>24 - _____</p> <p>29 - _____</p> <p>Total _____ x 2 = _____ (Score)</p>	<p>Tactile</p> <p>11 - _____</p> <p>14 - _____</p> <p>16 - _____</p> <p>22 - _____</p> <p>25 - _____</p> <p>Total _____ x 2 = _____ (Score)</p>
<p>Auditory</p> <p>1 - _____</p> <p>7 - _____</p> <p>9 - _____</p> <p>17 - _____</p> <p>20 - _____</p> <p>Total _____ x 2 = _____ (Score)</p>	<p style="text-align: center;">Group</p> <p>3 - _____</p> <p>4 - _____</p> <p>5 - _____</p> <p>21 - _____</p> <p>23 - _____</p> <p>Total _____ x 2 = _____ (Score)</p>
<p>Kinesthetic</p> <p>2 - _____</p> <p>8 - _____</p> <p>15 - _____</p> <p>19 - _____</p> <p>26 - _____</p> <p>Total _____ x 2 = _____ (Score)</p>	<p style="text-align: center;">Individual</p> <p>13 - _____</p> <p>18 - _____</p> <p>27 - _____</p> <p>28 - _____</p> <p>30 - _____</p> <p>Total _____ x 2 = _____ (Score)</p>
<p>Major learning styles score: 38 – 50</p> <hr style="width: 80%; margin-left: 0;"/> <p>Minor learning styles score: 25 – 37</p> <hr style="width: 80%; margin-left: 0;"/> <p>Negligible learning styles score: 0 – 24</p> <hr style="width: 80%; margin-left: 0;"/>	

APPENDIX B

Explanation of Perceptual Learning Style Preferences

Students learn in many different ways. The results of the Perceptual Learning Style Preference Questionnaire show which ways you prefer to learn English. In many cases, students' learning style preferences show how well students learn material in different situations.

The explanations of major learning style preferences below describe the characteristics of those learners. The descriptions will give you some information about ways in which you learn best.

Visual Major Learning Style Preference

You learn well from seeing words in books, on the chalkboard, and in workbooks. You remember and understand information and instructions better if you read them. You do not need as much oral explanation as an auditory learner, and you can often learn alone with a book. You should take notes of lectures and oral directions if you want to remember the information.

Auditory Major Learning Style Preference

You learn from hearing words spoken and from oral explanation. You may remember information by reading aloud or by moving your lips as you read, especially when you are learning new material. You benefit from hearing audiotapes, lectures, and class discussion. You benefit from making tapes to listen to, by teaching other students, and by conversing with your teacher.

Kinesthetic Major Learning Style Preference

You learn best by experience, by being involved physically in classroom experiences. You remember information well when you actively participate in activities, field trips, and role-playing in the classroom. A combination of stimuli – for example, an audiotape combined with an activity – will help you understand new material.

Tactile Major Learning Style Preference

You learn best when you have the opportunity to do “hands-on” experiences with new materials. That is, working on experiments in laboratory, handling and building models,

and touching and working with new materials provide you with the most successful learning situations. Writing notes or instructions can help you remember information, and physical involvement in class-related activities may help you understand new information.

Group Major Learning Style Preference

You learn more easily when you study with at least one other student, and you will be more successful completing work well when you work with others. You value group interaction and class work with other students, and you remember information better when you work with two or three classmates. The stimulation you receive from group work helps you learn and understand new information.

Individual Major Learning Style Preference

You learn best when you work alone. You think better when you study alone, and you remember information you learn by yourself. You understand material best when you learn it alone, and you make better progress in learning when you work by yourself.

Minor Learning Styles

In most cases, minor learning styles indicate areas where you can function well as a learner. Usually, a very successful learner can learn in several different ways, and so you might want to experiment with ways to practice and strengthen your minor learning styles.

Negligible Learning Styles

Often, a negligible score indicates that you may have difficulty learning in that way. One solution may be to direct your learning to your stronger styles. Another solution may be to try to work on some of the skills to strengthen your learning style(s) in the negligible area(s).

(Reid, 1995, pp. 162-167)