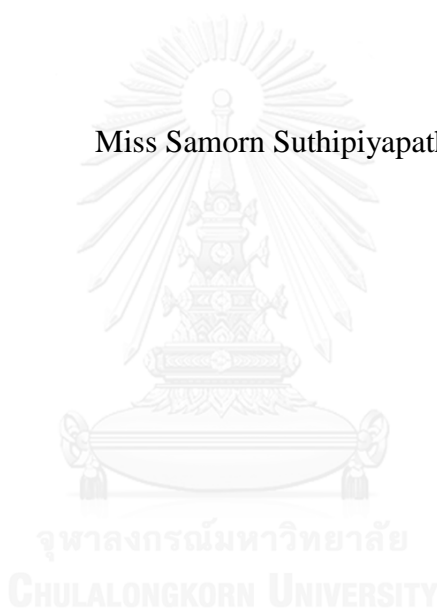


DEVELOPMENT OF AN ENGLISH INSTRUCTIONAL MANAGEMENT
MODEL BASED ON DIFFERENTIATED INSTRUCTION AND UNIVERSAL
DESIGN TO ENHANCE ENGLISH LEARNING ACHIEVEMENT, SOCIAL
SKILLS, AND LEARNING ENGAGEMENT OF UNDERGRADUATE
STUDENTS WITH AND WITHOUT HEARING IMPAIRMENT IN
INCLUSIVE ENGLISH CLASSROOMS

Miss Samorn Suthipiyapathra



บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
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การพัฒนาโมเดลการจัดการเรียนการสอนภาษาอังกฤษตามแนวการสอนตามความสามารถ
ของผู้เรียนและการออกแบบการเรียนรู้ที่เป็นสากล เพื่อเสริมสร้างผลสัมฤทธิ์ทางการเรียน
ภาษาอังกฤษ ทักษะทางสังคม และความยึดมั่นผูกพันกับการเรียนของนักศึกษาปริญญาตรี
ที่มีการได้ยื่นปกติและที่มีความบกพร่องในการได้ยิน ในห้องเรียนภาษาอังกฤษ
แบบการจัดการเรียนรวม



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต
สาขาวิชาภาษาอังกฤษเป็นภาษานานาชาติ (สหสาขาวิชา)
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2558
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

สมร สุทธิพิยภัทร : การพัฒนาโมเดลการจัดการเรียนการสอนภาษาอังกฤษตามแนวการสอนตามความสามารถของผู้เรียนและการออกแบบการเรียนรู้ที่เป็นสากล เพื่อเสริมสร้างผลสัมฤทธิ์ทางการเรียนภาษาอังกฤษ ทักษะทางสังคม และความยึดมั่นผูกพันกับการเรียนของนักศึกษาปริญญาตรีที่มีการได้ยินปกติและที่มีความบกพร่องในการได้ยิน ในห้องเรียนภาษาอังกฤษแบบการจัดการเรียนรวม (DEVELOPMENT OF AN ENGLISH INSTRUCTIONAL MANAGEMENT MODEL BASED ON DIFFERENTIATED INSTRUCTION AND UNIVERSAL DESIGN TO ENHANCE ENGLISH LEARNING ACHIEVEMENT, SOCIAL SKILLS, AND LEARNING ENGAGEMENT OF UNDERGRADUATE STUDENTS WITH AND WITHOUT HEARING IMPAIRMENT IN INCLUSIVE ENGLISH CLASSROOMS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ดร. จุฬารัตน์ วิบูลผล, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: ดร. สิริลักษณ์ โปร่งสันเทียะ, 230 หน้า.

งานวิจัยนี้มีวัตถุประสงค์เพื่อพัฒนาโมเดลการจัดการเรียนการสอนภาษาอังกฤษตามแนวการสอนตามความสามารถของผู้เรียนและการออกแบบการเรียนรู้ที่เป็นสากล เพื่อเสริมสร้างผลสัมฤทธิ์ทางการเรียนภาษาอังกฤษ ทักษะทางสังคมและความยึดมั่นผูกพันกับการเรียนของนักศึกษาปริญญาตรีที่มีการได้ยินปกติและที่มีความบกพร่องในการได้ยินในห้องเรียนภาษาอังกฤษแบบการจัดการเรียนรวม กระบวนการวิจัย ประกอบด้วยขั้นตอนคือ 1) การศึกษาวิเคราะห์สภาพการณ์ในปัจจุบัน 2) การพัฒนาโมเดล 3) การทดลองใช้โมเดล 4) การประเมินผลโมเดล โมเดลนี้ได้พัฒนามาจากผลของการศึกษาวิเคราะห์สภาพการณ์ในปัจจุบันและวรรณกรรมที่เกี่ยวข้อง และจากนั้นได้นำไปทดลองใช้ในรายวิชาภาษาอังกฤษพื้นฐานของนักศึกษาระดับปริญญาตรีซึ่งประกอบด้วยนักศึกษาที่มีการได้ยินปกติจำนวน 50 คน และนักศึกษาที่มีความบกพร่องในการได้ยินจำนวน 4 คน งานวิจัยนี้ใช้แบบทดสอบภาษาอังกฤษ แบบสอบถามเกี่ยวกับทักษะทางสังคม แบบสอบถามเกี่ยวกับความยึดมั่นผูกพันกับการเรียน แบบบันทึกการเรียนและการสัมภาษณ์เพื่อประเมินประสิทธิผลของโมเดล

ผลจากศึกษาวิจัยนี้ได้นำมาพัฒนาเป็น โมเดลสำหรับการจัดการเรียนการสอนภาษาอังกฤษในห้องเรียนภาษาอังกฤษแบบการจัดการเรียนรวมสำหรับนักศึกษาที่มีการได้ยินปกติและที่มีความบกพร่องในการได้ยิน โดยมีชื่อโมเดลคือ โมเดลการจัดการเรียนการสอนภาษาอังกฤษ DI&UD โมเดลนี้ได้อธิบายลักษณะการอำนวยความสะดวกและการดัดแปลงการเรียนการสอนใน 4 ขั้นตอน อันได้แก่ 1) การแนะนำบทเรียน 2) การเตรียมความรู้ทางด้านภาษาอังกฤษ 3) การทำงานที่ได้รับมอบหมาย 4) การสรุปบทเรียน ในด้านการอำนวยความสะดวกโมเดลนี้ให้บริการล่ามภาษามือและผู้จัดคำบรรยายเพื่ออำนวยความสะดวกสำหรับนักศึกษาที่มีความบกพร่องในการได้ยิน และในด้านการดัดแปลงโมเดลนี้ได้มีการดัดแปลงเนื้อหา กระบวนการและผลงานเพื่อให้นักศึกษาทั้งสองกลุ่มมีโอกาสเข้าถึงสื่อการเรียนการสอน กิจกรรมในห้องเรียนและการประเมินผลได้อย่างเท่าเทียมกัน ผลการวิจัยพบว่า โมเดลการจัดการเรียนการสอนภาษาอังกฤษ DI&UD สามารถเสริมสร้างผลสัมฤทธิ์ทางการเรียนภาษาอังกฤษ ทักษะทางสังคมและความยึดมั่นผูกพันกับการเรียนของนักศึกษาทั้งสองกลุ่ม อย่างไรก็ตาม ผลสัมฤทธิ์ทางการเรียนภาษาอังกฤษและความยึดมั่นผูกพันกับการเรียนของนักศึกษาทั้งสองกลุ่มมีความแตกต่างกัน ซึ่งผลจากการวิจัยแสดงให้เห็นว่า โมเดลการจัดการเรียนการสอนภาษาอังกฤษ DI&UD นี้ สามารถนำไปใช้ได้ในห้องเรียนภาษาอังกฤษแบบการจัดการเรียนรวมเพื่อเอื้อให้นักศึกษาสามารถพัฒนาทักษะการเรียนภาษาอังกฤษทั้ง 4 ทักษะและความยึดมั่นผูกพันกับการเรียนในห้องเรียนรวมให้ดียิ่งขึ้นได้ ทั้งนี้ เนื่องจากห้องเรียนโดยทั่วไปอาจจะไม่สามารถให้บริการสิ่งอำนวยความสะดวกและดัดแปลงสื่อการเรียนการสอน กิจกรรมในห้องเรียนและการประเมินผลได้ครบถ้วน งานวิจัยนี้จึงมีข้อเสนอแนะให้ศึกษาวิจัยเพิ่มเติมเรื่องลักษณะของการเอื้ออำนวยและการดัดแปลงที่มีประสิทธิภาพสูงที่สุดสำหรับโมเดลการจัดการเรียนการสอนภาษาอังกฤษ DI&UD เพื่อที่จะสามารถออกแบบการเรียนการสอนที่เหมาะสมกับบริบทแวดล้อมและทรัพยากรที่มีอยู่ในสถานศึกษาแต่ละแห่งได้

สาขาวิชา ภาษาอังกฤษเป็นภาษานานาชาติ

ปีการศึกษา 2558

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KEYWORDS:

SAMORN SUTHIPIYAPATHRA: DEVELOPMENT OF AN ENGLISH INSTRUCTIONAL MANAGEMENT MODEL BASED ON DIFFERENTIATED INSTRUCTION AND UNIVERSAL DESIGN TO ENHANCE ENGLISH LEARNING ACHIEVEMENT, SOCIAL SKILLS, AND LEARNING ENGAGEMENT OF UNDERGRADUATE STUDENTS WITH AND WITHOUT HEARING IMPAIRMENT IN INCLUSIVE ENGLISH CLASSROOMS. ADVISOR: JUTARAT VIBULPHOL, Ph.D., CO-ADVISOR: SIRILUCK PRONGSANTIA, Ed.D., 230 pp.

The objectives of this study were to develop an English instructional management model based on differentiated instruction and universal design for learning to enhance English learning achievement, social skills, and learning engagement of undergraduate students with and without hearing impairment in inclusive English classrooms. The research processes consisted of four phases: situation analysis, model development, model implementation, and model evaluation. The model was developed based on the results of the situation analysis and related literature and implemented in a foundation English classroom for undergraduate students. Fifty hearing students and four students with hearing impairment participated in the study. English learning achievement tests, social skill questionnaire, learning engagement questionnaire, learning logs, and semi-structured interviews were employed to evaluate the effects of the model.

The results of the study was an English instructional management model for English inclusive classrooms with students with and without hearing impairment entitled “The DI&UD English instructional management model.” The model describes the types of accommodation and adaptation in four teaching steps of an English lesson—lesson introduction, language input, language task, and conclusion. Regarding accommodation, students with hearing impairment were supported by a sign language interpreter and a note-taker. For adaptation, content, process, and product were differentiated to provide equal opportunities for both groups of students to access instructional materials, activities, and assessment tasks in inclusive classrooms. The results of the model evaluation indicated that the DI&UD English instructional management model had positive effects on students’ English learning achievement, social skills, and learning engagement; however the effects on the students with and without hearing impairment differed in regard to English learning achievement and learning engagement. These results suggest that the DI&UD English instructional management model can be used in English inclusive classrooms to support students with hearing impairment with some adjustment in order to enhance all four communication skills and learning engagement. Since the DI&UD English instructional management model includes the provision of many types of accommodation and adaptation which may not always be available in natural classroom settings, further research can be conducted to investigate the most effective types of accommodation and adaptation in the model so that English educators will be able to design the instruction that is appropriate to their local contexts and resources.

Field of Study: English as an International Language Student's Signature

Academic Year: 2015 Advisor's Signature

Co-Advisor's Signature

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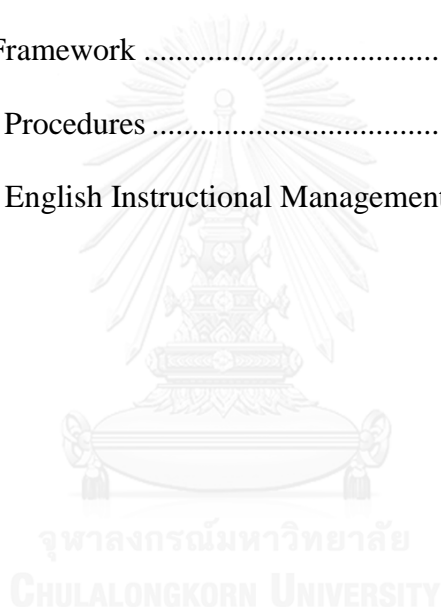
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CHAPTER I

INTRODUCTION

The policy and legislation of inclusive education was recognized in the 1990's at the World Conference on special education held in Salamanca, Spain in June 1994 called Salamanca Statement on Principle, Policy and Practice in Special Needs Education (UNESCO, 2008). The Salamanca Statement provided the general framework for Education for All (EFA) which proposed the idea that all people have equal rights to access education at all levels with similar quality standards without discrimination (UNESCO, 2008). Inclusive education can help students gain academic structure and social skills through student-centered teaching methodologies focusing on individual needs, understanding of learner differences, and equal rights (Mitchel, 2008; Thompkins & Deloney, 1995; UNICEF, 2003).

In Thailand, the government passed the National Education Act in 1999 which reflects the importance of inclusive education by stating that people must have the same educational opportunities regardless of disability (UNICEF, 2003). Education for people with disabilities is now provided at both basic education and higher education levels (Ministry of Education, 2008). The Bureau of Special Education Administration is responsible for Grades 1-9 and the Office of Basic Education Commission (OBEC) is responsible for Grades 10-12. As of 2010, there were 18,370 inclusive schools serving around 320,032 students with disabilities in Thailand (The Bureau of Special Education Administration, 2010). For higher education, the Office of Higher Education Commission (OHEC) is responsible for students with disabilities. There were 1,998 students with disabilities in 114 institutions around

Thailand (Office of the Higher Education Commission, 2012). Among these, 497 undergraduate students with hearing impairment were studying in 54 institutions around the country.

In providing inclusive education for students with hearing impairment, teaching English as a second or foreign language has been one of the challenges (Deaf Port Project, 2008; Dotter, 2008). In non-English speaking countries such as Thailand, students with hearing impairment use Thai sign language as their first language which is different from English language in terms of grammar rules (Berent, 2001; Dangsaart, Naruedomkul, Cercone, & Sirinavakul, 2007). As a result, students with hearing impairment face challenges in learning English as a foreign or second language (Berent, 2001; Deaf Port Project, 2008; Dotter, 2008).

Many studies have shown problems in inclusive English classrooms with students with hearing impairment (Lang, 2002; Luckner & Friend, 2006). The three important areas of concern were language skills, social skills, and learning engagement (Andrews, Leigh, & Weiner, 2004; Stinson & Antia, 1999). According to Richardson, Long, and Foster (2004), the academic structure and social life were important factors to engage students in the learning environment. Studies have found that many students with hearing impairment developed language skills at a slower rate than that of hearing students (Andrews et al., 2004; Luckner & Friend, 2006). Due to communication difficulty, students with hearing impairment had fewer social interactions with hearing students so they tended to have fewer friends and were at risk of feeling isolated (Hallahan & Kauffman, 2003; Luckner & Friend, 2006; Moores, 2001). In addition, several studies found that students with hearing impairment faced problems in participating in inclusive classrooms due to teaching

pace, number of speakers involved, and language and cultural differences (Lang, 2002; Richardson et al., 2004).

However, there has been relatively little research that could guide teachers in utilizing the best instructional practices in inclusive classrooms (Luckner & Friend, 2006; Vorapanya, 2008). Only a few studies have dealt with issues in English as a foreign or second language classrooms for students with hearing impairment (Andrews et al., 2004; Dotter, 2008). Specifically, in Thailand, there is no research on inclusive English classrooms with students with hearing impairment.

Considering the goal of inclusive education and problems found in inclusive English classrooms with students with hearing impairment, appropriate instruction must 'accommodate' the students in order for them to fully participate in class activities as other students do (Hunt & Marshall, 2012; Luckner & Friend, 2006; Office of the Higher Education Commission, 2012) and 'adapt' the materials, activities, and classroom assessment to suit the needs of all students in the class so that they can meet the same educational standards (Haager & Klingner, 2005; Tomlinson, 2001). A "one-size-fits-all" approach in which the same instruction is provided for all students may not be effective for hearing impairment students in inclusive English classrooms (G. Gregory & Chapman, 2007; Haager & Klingner, 2005; Tomlinson, 2001). This study proposed an English instructional model that integrated the principles of the differentiated instruction (DI) and universal design for learning (UDL) to respond to the different learning needs of students in inclusive English as a second or foreign language classrooms.

According to Udvari-Solner, Villa, and Thousand (2005), differentiated instruction (DI) and universal design for learning (UDL) are well suited with each

other because universal design for learning is “a systematic decision-making method for differentiation” (p.138). To elaborate, DI allows teachers to differentiate three elements of a curriculum (content, process, and product) in order to maximize the engagement and learning potential of an individual student (Tomlinson, 2001) while UDL is a principle for designing curriculum that provides each learner equal opportunities to learn and support different learning needs of diverse students in inclusive classrooms by using flexible instructional materials, teaching methods, and assessment (Hall, Strangman, & Meyer, 2003; Udvari-Solner et al., 2005). Therefore, these two approaches can complement each other to serve the needs of the learners. The integration of DI and UDL may address the challenges faced by inclusive classrooms effectively.

1.1 Objectives of the Study

1.1.1 To develop an English instructional management model based on differentiated instruction and universal design for learning.

1.1.2 To investigate the effects of an English instructional management model based on differentiated instruction and universal design for learning on English learning achievement, social skills, and learning engagement of undergraduate students with and without hearing impairment in inclusive English classrooms.

1.2 Research Questions

1.2.1 What is an English instructional management model based on differentiated instruction and universal design for learning?

1.2.2 What are the effects of an English instructional management model based on differentiated instruction and universal design for learning on English

learning achievement, social skills, and learning engagement of undergraduate students with and without hearing impairment in inclusive English classrooms?

1.3 Scope of the Study

This study aimed to develop an English instructional management model for undergraduate students with and without hearing impairment in inclusive English classrooms in higher education in Thailand. The population was undergraduate students with and without hearing impairment in Thai higher education institutions that have a policy for inclusive education. The independent variable was an English instructional management model and the dependent variables were English learning achievement, social skills, and learning engagement.

1.4 Definitions of Terms

1.4.1 An English instructional management model

An English instructional management model refers to planning for instruction and delivering instruction that are employed to provide appropriate learning environment for students with and without disabilities in English classrooms. In this study, the model was developed specifically for inclusive English classrooms having both students with and without hearing impairment. Two main principles—accommodation and adaptation—were applied throughout four teaching steps in a lesson to provide effective instructional management that serves the diverse needs in the inclusive classrooms.

1.4.2 Accommodation

Accommodation is a support service that makes the learning environment appropriate and accessible for students with disabilities as needed and as required by law. In this study, two types of accommodation including a sign language interpreter

and a note-taker are provided in each English lesson to help the students with hearing impairment to fully participate in the classroom.

1.4.3 Adaptation

Adaptation is any adjustment made to the curriculum, instruction, or textbook when providing inclusive education so that students with and without disabilities may participate in the same activity and use the same learning materials. In this study, three types of adaptation: content differentiation, process differentiation, and product differentiation are implemented in inclusive English classrooms.

1.4.3.1 Content differentiation is an adaptation made to the instructional materials in order to make the content of a lesson manageable for all students in inclusive classrooms. In this study, three techniques were used: supporting background context, highlighting critical features, and providing multiple examples.

1.4.3.2 Process differentiation is an adaptation made to the learning activities in order to make the process of a lesson manageable for all students in inclusive classrooms. In this study, two techniques were used: adjusting levels of challenge and offering choices of content.

1.4.3.3 Product differentiation is an adaptation made to the assessment in order to make the product of a lesson manageable for all students in inclusive classrooms. In this study, two techniques were used: offering opportunities to demonstrate skills through the most effective modality and practicing with support.

1.4.4 English learning achievement

English learning achievement refers to the ability to use English in listening, speaking, reading, and writing. In this study, scores obtained from the pre- and post-test indicate the students' English learning achievement.

1.4.5 Social skills

Social skills are the ability to build and maintain a trusting climate when working in cooperative groups. In this study, students' behaviors regarding openness, sharing, acceptance, support, and cooperative intentions were assessed to determine the student's social skills.

1.4.5.1 Openness refers to students' willingness to share and discuss ideas, and listen to other students about the information being discussed.

1.4.5.2 Sharing refers to students' offering help, materials, and resources to others in order to accomplish a group goal.

1.4.5.3 Acceptance refers to students' accepting others' ideas and contributions about the information being discussed.

1.4.5.4 Support refers to students' assisting others who have difficulty in managing the information being discussed.

1.4.5.5 Cooperative intentions refer to students' willingness to cooperate with others to achieve a group goal.

1.4.6 Learning engagement

Learning engagement comprises active interactions involving students that are integrated in academic and social factors in learning environment both inside and outside the classrooms. In this study, three aspects of engagement were assessed to determine students' learning engagement: behavioral engagement, affective engagement, and cognitive engagement.

1.4.6.1 Behavioral engagement is the student's active participation in school activities including class attendance, punctual arrival, class preparation, asking questions, participation in classroom activities, completion of homework,

extracurricular activities, and efforts towards learning. In this study, students' active participation in class activities both inside and outside the class in terms of attendance, preparation, attention, asking questions, contributions, and efforts were used to indicate behavioral engagement.

1.4.6.1.1 Attendance refers to students' coming to class on time.

1.4.6.1.2 Preparation refers to students' pre-class reading of the learning materials and reviewing what they had learned in prior classes.

1.4.6.1.3 Attention refers to students' listening to the lecture and looking at the sign interpreter during the class activities.

1.4.6.1.4 Asking questions refers to students' asking questions of the teacher when they did not understand the information being discussed during class activities.

1.4.6.1.5 Contribution refers to students' working on the assigned tasks during the class activities and outside the class.

1.4.6.1.6 Efforts refer to students' searching for more information and having conversations with the teacher about the assignments after the class.

1.4.6.2 Affective engagement is the students' interest, enjoyment, feelings, attitudes, and values about learning which describe an inner drive to succeed in learning. In this study, students' emotions, attitudes, and values towards course content, class activities, and teaching steps were used to indicate affective engagement.

1.4.6.2.1 Emotions refer to students' feeling happiness, enjoyment, or confusion when doing the class activities.

1.4.6.2.2 *Attitudes* refer to class activities that were interesting and helped students comprehend the lessons, materials that were easy to understand, and the teaching steps that were in order and clear.

1.4.6.2.3 *Values* refer to students' use of what they had learned in class for daily life, for communicating and doing business with other people from different countries, and further studies.

1.4.6.3 *Cognitive engagement* is student's mental effort devoted to learning task and learning process. In this study, students' cognitive process in terms of remembering, understanding, applying, analyzing, evaluating, and creating were used to indicate cognitive engagement.

1.4.6.3.1 *Remembering* refers to the ability to recall information learned during prior classes.

1.4.6.3.2 *Understanding* refers to the ability to explain ideas and information that had been learned in class.

1.4.6.3.3 *Applying* refers to the ability to use what had been learned in class in similar situations or relate to their prior experience.

1.4.6.3.4 *Analyzing* refers to the ability to compare and associate the similarities and differences between what had been learned in class and prior knowledge.

1.4.6.3.5 *Evaluating* refers to the ability to generate ideas or ways of viewing things based on what had been learned in class.

1.4.6.3.6 *Creating* refers to the ability to create new ideas or examples based on when had been learned in class.

1.4.7 Inclusive English classrooms

Inclusive English classrooms are regular English classrooms that include students with and without disabilities which accommodate and adapt resources for students with disabilities to learn and participate in class activities with the same learning outcomes as others. In this study, inclusive English classrooms refer to the participation of students with and without hearing impairment in regular classrooms that provide English lessons and accommodate students with hearing impairment for them to participate in class activities similar to hearing students, and adapt materials, activities, and assessment in order for students with and without hearing impairment to reach the same learning outcomes.

1.4.8 Students with hearing impairment

Students with hearing impairment are persons with hearing disability ranging from mild to profound that affect their educational performance in processing linguistic information through audition, with or without a hearing aid. In this study, students with hearing impairment refers to hard of hearing students and deaf students who have registered as persons with disabilities.

1.5 Significance of the Study

The English instructional management model provides some pedagogical aspects for English teachers to formulate ideas about how to accommodate students with hearing impairment, and adapt materials, activities, and classroom assessment in inclusive English classrooms in order to enhance students' English learning achievement, social skills, and learning engagement.

The underlying principles of differentiated instruction (DI) and universal design for learning (UDL) provide the theoretical aspects to adapt the three aspects of

curriculum (content, process, and product) in order to make materials, activities, and classroom assessment to respond to the unique needs of students with and without hearing impairment which help emphasize students' strengths while accommodating their limitations.

The development of the English instructional management model contributes to the prototype of in English language teaching and learning in inclusive English classrooms. Other researchers could use this model as the guideline to develop the English instructional management model for other types of students with disabilities, which may help expand the English instruction in other fields of inclusive education.

1.6 The Organization of the Study

Chapter 1 provides an overview of the current situation and issues in English classrooms regarding students with hearing impairment and also identifies the areas of research to be investigated in the present study. Chapter 2 reviews inclusive education in general and in Thailand. Issues in inclusive English classrooms with students with hearing impairment and teaching approaches for inclusive education are also reviewed. Chapter 3 explains the methodology that was employed to develop the model of English instructional management which consisted of four phases: situation analysis, model development, model implementation, and model evaluation. Chapter 4 presents the findings about the key features of the English instructional management model and the effects of the model on English learning achievement, social skills, and learning engagement. Chapter 5 presents the summary of the findings of the study, discussion, limitations of the study, pedagogical implications, and recommendations for further research.

CHAPTER II

LITERATURE REVIEW

This chapter reviews related literature and related studies in order to retrieve the background of the study concerning three main topics: inclusive education, issues in inclusive English classrooms with students with hearing impairment, and teaching approaches in inclusive education.

2.1 Inclusive Education

Inclusive education started from the belief that education is a fundamental human right, which derives from the principle of equity (UNESCO, 2008). UNESCO also stated that inclusive education implies a different vision of education based on diversity which responds to the learning needs of every student, respects diversity, fosters collaborative approaches and builds social interaction.

The policy and legislation of inclusive education was recognized in the 1990s (UNESCO, 2009). A significant event took place in March 1990 at Jomtien district, Chonburi province, Thailand with representatives of 155 governments, with the goal that education is for all including children with disabilities (The Bureau of Special Education Administration, 2010). This agreement brought inclusion into a framework. The United Nations formed the World Conference on special education, held in Salamanca, Spain in June 1994, with representatives of 92 governments and 25 international organizations called “Salamanca Statement on Principle, Policy and Practice in Special Needs Education” (Disability Support Service NRRU, 2012). According to UNICEF (2003), the Salamanca Statement provided a framework for inclusive education that “those who have special educational needs must have access

to regular schools which should accommodate them within a child-centered pedagogy capable of meeting these needs” (p. 9). The 61st session of the United Nations General Assembly in 2006 also confirmed a convention on the rights of disabled persons which included a significant commitment to inclusive education (Mitchell, 2010).

It is generally agreed that regular classrooms with an inclusive environment are effective to achieve non-discriminatory education (Mitchel, 2008; UNICEF, 2003). Many experts in the field of special education agreed that placing students with disabilities in regular classrooms is the least restrictive environment (LRE) which provides opportunities for students with disabilities to participate in the educational setting and can be successful with appropriate support provided (Choate, 2004; Friend & Bursuck, 2002).

The primary goal of inclusive classrooms is to teach all students to appreciate diversity, and accept, and learn from each other’s similarities and differences (Salend, 2008). Inclusive education provides academic structure and social skills to all students through learner-centered teaching methodologies, focus on meeting individual student needs, and understanding students’ differences and equal rights (Mitchel, 2008; UNESCO, 2008; UNICEF, 2003).

In conclusion, inclusive education has different interpretations in various countries but it is related to the participation of students with disabilities in regular classrooms (UNESCO, 2008). Many researchers asserted that inclusive education implies the participation of students with disabilities in regular classrooms that adapts and accommodates use of resources in order for students with disabilities to learn and

participate in school activities with the same learning outcomes as other peers (Farrell, 2009; Mitchel, 2008; Stinson & Antia, 1999).

2.1.1 Inclusive education in Thailand

In Thailand, the first school for persons with disabilities was for the blind which was established in 1939 by the NGO sector. Subsequently, a government commitment was made with the Act of the Rehabilitation of Disabled Persons in 1991 which entitled persons with disabilities to receive basic education, occupational education, and higher education (UNESCO, 2009).

The right for education of persons with disabilities was confirmed in the 1997 Constitution of the Kingdom of Thailand (UNICEF, 2003). It stated that all Thai citizens have the right to receive equal education provided by the government. This provided the general framework for Education for All (EFA) in Thailand whose key feature is the prioritization of persons with disabilities. In 1999, the Royal Thai Government passed the National Education Act which mandated that persons with disabilities must be provided the same educational opportunities as others. The Thai government also announced the year 1999 as the “Year of Education for Persons with Disabilities” which is considered as an educational goal for persons with disabilities.

According to Ministry of Education (2008), children with disabilities have opportunities to choose whether they would like to integrate into mainstream education, known as inclusive schools, or special schools which provide services tailored for students with disabilities. The Ministry of Education divides the educational system for persons with disabilities into two levels. The Office of the Basic Education Commission (OBEC) is the main organization that is responsible for

compulsory education and the Office of Higher Education Commission (OHEC) is responsible for the university level.

The Bureau of Special Education Administration under OBEC is responsible for compulsory education provision from Grades 1-9. The Office of the Basic Education Commission is responsible for high secondary school from Grades 10-12. According to the Bureau of Special Education Administration (2010), there were 18,370 inclusive schools serving around 320,032 students with disabilities in Thailand.

The Office of the Higher Education Commission (OHEC) supports inclusive education for students with disabilities in the university level. There were 1,998 students with disabilities studying in higher education in 157 institutions or about 93% of institutions in higher education around Thailand (Office of the Higher Education Commission, 2012). OHEC encourages Thai universities to establish a Disability Support Service (DSS) to provide equal educational opportunities for students with disabilities. The aims of DSS are to provide financial support and accommodation for students with disabilities so they may fully participate in the general education and meet the educational standards of their institutions. According to Office of Higher Education Commission (2012), there were 32 Disability Support Service (DSS) that provided financial support and accommodation for students with disabilities in higher education in Thailand.

In Thailand, there is not much research about inclusive education for students with disabilities compared to research in general education (Nayong, 2010). Vorapanya (2008) worked on a model of inclusive schools in Thailand to investigate ten inclusive elementary schools in Thailand. It was found that a child-centered

approach was the best philosophy to help students with disabilities. Within the child-centered approach, teachers could focus on individual student abilities rather than comparing their progress with the norm of the whole class. A project approach in which an individual student could learn to work on a project at their own pace was preferred in some inclusive schools. For the project approach, students with disabilities created something simple while students without disabilities produced more of a complex work within the same topic. In terms of assessment, it was found that teachers could not rely only on a paper-based assessment. Assessment processes had to be flexible enough to accommodate different levels and capacity for learning of both students with and without disabilities. Portfolios and extra time for tasks were used to assist students with disabilities and students with disabilities were allowed to demonstrate their knowledge at the level where they felt comfortable.

In conclusion, the Thai government recognized the importance of education for persons with disabilities by passing the National Educational Act in 1999 to indicate that all persons with disabilities must have the same education opportunities as others. The Ministry of Education supports the education for persons with disabilities by providing the educational systems for students with disabilities in both basic education and higher education. The Office of the Basic Education Commission (OBEC) is responsible for basic education while the Office of the Higher Education Commission (OHEC) is responsible for higher education. OHEC also encourages universities to establish the Disability Support Service (DSS) to provide financial support and accommodation in order for them to fully participate in general education with other students.

2.1.2 Inclusive Education for Students with Hearing Impairment

Students with hearing impairment have opportunities to participate in educational settings ranging from the general education classroom to the special school. Since educators in the field of deaf education continue to address sociocultural and communication factors, the rate of developments in general education of students with hearing impairment are greater than in the past (Moore, 2001). According to Hunt & Marshall (2012), about 60% of children with hearing impairment were placed in the general education classroom and only 8% attended special schools.

Many experts in the field of deaf education asserted that the placement of students with hearing impairment in general education is the most appropriate and least restrictive environment for them (Gearheart, Weishahn, & Gearheart, 1996; Luckner & Friend, 2006). The regular classroom placement provided opportunities for students with hearing impairment to develop relationships with hearing classmates, gain a feeling of belonging, explore a greater variety of language styles, establish a wider variety of communication techniques, compete academically with hearing classmates, and prepare to live in a hearing world after completing their education (Gearheart et al., 1996). An advantage of regular classrooms is also to provide opportunities for hearing students to become acquainted with persons who are different from them. This should be positive for hearing students as they learn to relate with and understand people who have disabilities (Gearheart et al., 1996).

However, some experts in the field of deaf education disagreed with placing students with hearing impairment in regular classrooms. Stinson and Antia (1999) asserted that special education shares a common language and culture which may

provide greater social benefits for students with hearing impairment. In addition, deaf professionals adopt the cultural perspective which describes people who are deaf as a cultural difference with its own language, social institutions, history, attitudes, and values (Hunt & Marshall, 2012). Thus, many people who are deaf have the feeling that they have a cultural difference because they use sign language and primarily associate with deaf people (Andrews, Leigh, & Weiner, 2004) and may not have commonalities with people in hearing environment (Hallahan & Kauffman, 2003).

Many studies showed that different countries have different policies and practices in deaf education. The following studies showed trends of deaf education in Australia, Spain, and United Kingdom.

In Australia, educational policies and programs of students with hearing impairment vary from state to state. In New South Wales, the New South Wales Disability Services Act 1993 stated that individuals with disabilities have the same human rights as those without disabilities (Byrnes, Sigafos, Rickards, & Brown, 2002). Once students with disabilities are enrolled, it is unlawful to use their disabilities as a reason for restricting access to any parts of the curriculum, imposing disadvantages, or expelling the students. Regular government schools in New South Wales provide support for students with hearing impairment to study in regular classrooms, either learning by themselves or with support.

In Spain, the educational policy for students with disabilities is focused on social integration which mandates that all students with disabilities study in ordinary schools to guarantee equal opportunities and their integration in society (Fernandez-Viader & Fuentes, 2004). The Spanish government recognizes the importance of sign language and incorporates it into the educational system by offering bilingual

educational projects for deaf students. The bilingual educational projects provide a response to the constitutional right of families allowing them to choose educational models for their children.

In the United Kingdom, the UK government states that students with special educational needs have the right to educate in mainstream schools (Powers, 2002). The educational provision offers choices in language and communication approaches, and types of educational placement for deaf children and their parents to choose to participate in mainstream classes. However, there is no clear evidence to suggest that mainstream programs are more effective than special schools. One of the key debates around inclusion of deaf children is whether deaf students should be considered differently from other students. There is no research data about deaf students who are educated in mainstream classes. However, anecdotal evidence showed that the large majority of deaf students remain in mainstream classes, with or without special support, especially in secondary school. This evidence showed that deaf students in mainstream classes were more likely to study craft and art subjects but less likely to enter into language-based subjects.

In conclusion, inclusive education is the appropriate education and least restrictive environment for students with hearing impairment. Each country and state have different policies and practices for deaf education but the important idea is to provide equal educational opportunities and social integration for students with hearing impairment in general classrooms as others.

2.1.3 Inclusive education for students with hearing impairment in Thailand

In Thailand, the Ministry of Education provides educational opportunities for students with hearing impairment in two levels: basic education and higher education (Ministry of Education, 2008). In basic education, students with hearing impairment must study in a special school. There were 20 government special schools which were provided for students with hearing impairment (Tammaesaeng, 2007). In higher education, students with hearing impairment are provided opportunity to study in regular classrooms in which they have to study with hearing students and reach the same learning standard as hearing students do. However, the university provides accommodation for students with hearing impairment as a basic accommodation to support students with hearing impairment to participate in inclusive classrooms. According to the Office of Higher Education (2012), the number of students with hearing impairment in higher education was 497 consisting of 205 males and 292 females. There were 54 institutions that have students with hearing impairment including 13 government universities, 22 Rajabhat Universities, 7 institutions of Rajamangala University of Technology, 10 private universities, and 2 community colleges.

However, there is not much research about students with hearing impairment in both basic education and higher education in Thailand, especially research about inclusive education for students with hearing impairment in English classrooms. Nayong (2010) developed an instructional model for hearing impaired undergraduate students in higher education. The results showed that the instructional model called the 'Life skills' module which consisted of six lessons: biology vocabulary, concept

learning, physical capacity, plant growing, knowledge management, and collaboration improved academic achievement and cognitive skill in terms of knowledge utilization and self-system thinking of students with hearing impairment. Sathukarn (2007) developed an online instruction model that was used Educational Technology for students with hearing impairment in higher education. The results showed that the online instructional model which comprised of four components: input, process, output, and feedback improved learning achievement of students with hearing impairment and the students had positive satisfaction toward the online instruction model.

In conclusion, the Ministry of Education provides educational opportunities for students with hearing impairment in both basic education and higher education. In basic education, students with hearing impairment have to study in special schools while in higher education, students with hearing impairment are provided opportunities to study in general education with other students. However, there is not much research to guide instructional practices for students with hearing impairment in general education, especially in English classrooms.

2.2 Issues in Inclusive English Classrooms with Students with Hearing Impairment in Higher Education

Many studies revealed that there issues found in inclusive classrooms with students with hearing impairment in higher education such as academic anxiety, time management, personal factors (Albertini, Kelly, & Matchett, 2012), language skills, social integration (Luckner & Friend, 2006; Stinson & Antia, 1999), support service, and classroom participation (Lang, 2002; Richardson, MacLeod-Gallinger, McKee, & Long, 2000).

However, the three important relevant areas are language skills, social skills, and learning engagement. According to Richardson, Long, and Foster (2004), academic and social aspects are important to enhance student engagement. Richardson et al. also mentioned that the academic structure and social life are important factors for integration of students into the learning environment.

Due to communication difficulty, many students with hearing impairment develop language skills at a slower rate than that of hearing students (Gearheart et al., 1996). In addition, interactive effects of inability to learn a language might influence performance of students with hearing impairment on many tasks (Luckner & Friend, 2006). Students with hearing impairment had fewer social interactions with hearing students so that students with hearing impairment had fewer friends and may be at risk for loneliness (Hallahan & Kauffman, 2003; Luckner & Friend, 2006; Moores, 2001). Furthermore, several studies found that learning engagement for students with hearing impairment in higher education was one of the most difficult goals to meet in the inclusive classroom environment such as the teaching pace and language differences (Lang, 2002; Richardson et al., 2004).

2.2.1 Language skills

Teaching English as a second or foreign language to students with hearing impairment has been a challenge, especially in higher education (Berent, 2001; Deaf Port Project, 2008; Dotter, 2008). In Thailand, students with hearing impairment use Thai sign language as their first language, so the differences between the structures of Thai sign language and English language may affect English language learning for students with hearing impairment (Dangsaart, Naruedomkul, Cerccone, & Sirinavakul,

2007). As a result, learning English as a second or foreign language is a big challenge in higher education study.

To understand the impact of deafness on literacy, it is important to understand that many students with hearing impairment learn language at the same time that they are learning to read (Andrews et al., 2004). Many students with hearing impairment are generally taught reading and writing through formal instruction, so they may have a small spoken language vocabulary and have difficulty with some syntactical constructions (Andrews et al., 2004; Deaf Port Project, 2008; S. Gregory, 2005).

Since the inability to hear results in difficulties in acquiring language (S. Gregory, 2005; Paul, 2001), the process of language learning for students with hearing impairment is different from that of hearing students (Sri-on, 2013). Details of the process of language learning for students with and without hearing impairment are shown in Figure 1.

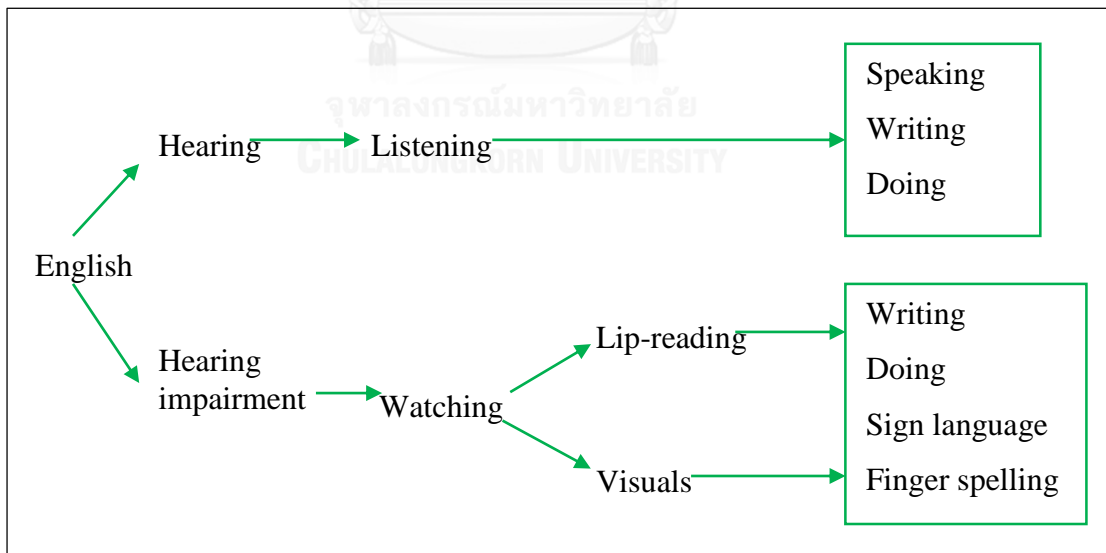


Figure 1 The Process of Language Learning for Students with and without Hearing Impairment

As Figure 1 shows, the process of language learning for students with and without hearing impairment are different. Hearing students listen to information and then produce what they had learned through speaking, writing, or doing. Due to the inability to hear, students with hearing impairment have to do lip reading or watch visuals, and then they can produce they what they had learned through sign language, writing, doing, or finger spelling.

2.2.1.1 Listening. Listening is an active process of making sense of what listeners hear and comprehend in real time. (Helgesen, 2003). According to Kashani et al. (2011), when listening to information was supplemented with visual aids, listeners performed better at reconstructing the meaning which helped the listeners improve their reading comprehension. Kashani et al. also stated that the use of visuals is a very effective way of making listening information more comprehensible which was useful for students with low English proficiency. Many studies suggested that visual aids established a beneficial learning environment for students with hearing impairment (Gearheart et al., 1996; Hunt & Marshall, 2012; Luckner & Friend, 2006). Visual strategies helped students with hearing impairment focus on important information, see how concepts are connected, integrate prior knowledge with new knowledge, and remember the information more easily than extended text (Luckner & Friend, 2006). Egan, Lerner, and Lowenthal (2003) stated that students with hearing impairment had both strengths and limitations on memory and creativity tasks. However, students with hearing impairment showed their advantages over hearing peers when the tasks were spatial tasks, imagery tasks, and memory for simultaneously presented shapes. Berent, Kelly, Schmitz, and Kenny (2009) asserted that visual input enhanced deaf college students' essay writing. Berent et al. also

stated that the bolding and contrast in font sizes served as visually enhanced input via coding and helped students with hearing impairment retain this improvement with a modest decrease after five and a half months.

2.2.1.2 Speaking. Speaking is an interactive process of making meaning that involves producing, receiving, and processing information (Bailey, 2005). Since students with hearing impairment are unable to hear, they do not acquire spoken languages as hearing peers do. However, students with hearing impairment are exposed to sign language as those of hearing peers are exposed to spoken languages (Paul, 2001). Students with hearing impairment use sign languages which are visual-gestural systems that use hands, body, and facial gestures to represent words and express meanings (Fromkin, Hyams, & Rodman, 2007; Moores, 2001; Yule, 1996).

2.2.1.3 Reading. Reading is a process wherein readers combine information from a text and their own background knowledge to create meanings (Anderson, 2003). Since hearing impairment limits associations between sounds and written symbols, the reading process which associates meaning may be a difficult learning area for students with hearing impairment (Gearheart et al., 1996). According to Luckner and Friend (2006), the median grade level for reading comprehension of eighteen-year-old students with hearing impairment was just below the fourth grade hearing students. Parault and Williams (2010) reported that the reading skill of college deaf students were slightly below a sixth-grade level. Marschark et al. (2012) stated that students with hearing impairment spent more time on reading but they read fewer books than hearing students. Parault and Williams (2010) reported that students with hearing impairment had higher reading levels of motivation but they did not read significantly more than hearing students.

2.2.1.4 Writing. Writing is very complicated for students with hearing impairment as they learn writing and spelling rules through finger-spelling (Luckner & Friend, 2006). Bisol et al. (2009) found that students with hearing impairment had difficulty with writing a long word or complete sentence. According to Andrews et al. (2004), students with hearing impairment tended to use shorter and simpler sentences, repetition, and less-flexible word order. Paul (2001) found that students with hearing impairment had difficulty in writing sentences with embedded relationship and passive voice. According to Strassman and Schirmer (2014), the text produced by students with hearing impairment was comprehensible but it lacked organization, and supporting detail, was choppy, and was immature.

2.2.1.5 Grammar. Since sign language is not a universal language, students with hearing impairment use sign language of their own countries as their first language (Dangsaart et al., 2007; Farrell, 2009). Thus, the differences between the structure of English and the structure of sign language may influence deaf students' grammar development in the form of language transfer. Berent (2001) found that deaf college students experienced a variety of English structures depending on which structures deviated from the basic SVO order. Berent also asserted that when English structures deviated from the basic SVO order such as passive voice, questions, and relative clauses, these more complex structures challenged deaf students in terms of reading comprehension and written expression. Paul (2001) argued that students with hearing impairment seemed to persist in interpreting all sentences in terms of the basic English simple sentence, with subject-verb-object order.

2.2.1.6 Vocabulary. Vocabulary may be learned directly or indirectly, but most vocabulary knowledge is acquired indirectly through daily interaction and

conversational exchanges (Luckner & Cooke, 2010). Since students with hearing impairment had difficulty in comprehending and learning from the text, they had fewer opportunities for vocabulary learning and did not have sufficient English vocabulary knowledge from age-appropriate reading materials (Sarchet et al., 2014). Many studies showed that students with hearing impairment were delayed in acquiring vocabulary knowledge and had a narrow range of lexicons compared to that of hearing students. According to Andrews et al. (2004), students with hearing impairment tended to show less variation in the use of lexical items, had very limited access information, and had restricted vocabulary in comparison with hearing students. Paul (1996) found that students with hearing impairment might not have the ability to use context cues effectively, so they tended to use a highly informative context which was explicit and provided rich information about vocabulary, while hearing students tended to select primary meanings of vocabulary more often than secondary meanings even in sentences providing adequate contextual information. Sarchet et al. (2014) stated that vocabulary knowledge between students with hearing impairment and hearing students differs significantly. Also, it was found that students with hearing impairment overestimated their vocabulary knowledge more significantly than hearing students (15.46 and 7.67, respectively).

In conclusion, due to inability to hear, students with hearing impairment faced difficulty in language learning. In terms of reading, students with hearing impairment had limited access to language in multiple ways, so they did not have much background knowledge to associate meanings of what they have read. For writing, since students with hearing impairment learn writing and spelling rules through finger-spelling, they had problems in writing long sentences, often choppy with

repetitious word use. Reading and writing skills of students with hearing impairment may be affected by the differences between the structures of sign language and English language, limited vocabulary knowledge, and not having the ability to use contextual cues to guess the meaning. However, visual input is very beneficial to learning environment for students with hearing impairment. Visuals help students with hearing impairment focus on important information and remember the information more easily. Visuals also support hearing students with low English proficiency comprehend what they listen to more effectively when listening information is complemented with visuals. In addition, providing opportunities for students with hearing impairment use sign language to perform what they have learned may help them represent words and express meanings more effectively.

2.2.2 Social skills

The issue of social interactions and relationships between students with hearing impairment and hearing peers is an important area of concern in inclusive education (Stinson & Antia, 1999). Studies have shown that social integration was a crucial factor that affected student persistence in higher education programs (Batten, Oakes, & Alexander, 2013; Kluwin, Stinson, & Colarossi, 2002).

In today's world, social skills are necessary for success in school and later in life (Haager & Klingner, 2005; Knapczyk & Rodes, 1996; Mastropieri & Scruggs, 2004). Social skills are the ability to adjust to different social contexts which include a wide array of specific responses required to appropriately initiate, maintain, adapt, alter, and terminate interaction with others (Knapczyk & Rodes, 1996; Ryndak & Alper, 1996). Students who had good or adequate social skills were able to attain beneficial outcomes and achieve goals from participating in interaction (Knapczyk &

Rodes, 1996; Mastropieri & Scruggs, 2004). According to Johnson and Johnson (1994), students who had more social skills interacted appropriately and improved their classroom attendance. However, inappropriate social skills may result in negative outcomes, lower achievement in school, unsuccessful integration, and interfere with developing friendships with others (Ryndak & Alper, 1996).

Many researchers asserted that social skills include the ability to get along with others, adjust behaviors, accept others, read others' responses and feelings, and initiate social interactions (Haager & Klingner, 2005; Mastropieri & Scruggs, 2004). According to Salend (2008) and Stinson and Antia (1999), the ability to interact, make friends, and adjust behaviors enhanced students' learning, emotional development, and acceptance of individual differences. Wauters and Knoors (2008) also asserted that peer acceptance affected opportunities for making friends. Students who were well liked by many peers showed positive behaviors such as cooperating, helping other, and being considerate.

Many studies showed that social interaction between students with hearing impairment and hearing students was much less than that among hearing students. Kluwin, Stinson, and Colarossi (2002) reported that students with hearing impairment felt frustrated in making friends with hearing students. Batten, Oakes, and Alexander (2013) stated that students with hearing impairment were more likely to have fewer friends in their inclusive classrooms. Stinson and Antia (1999) found that in regard to acceptance, students with hearing impairment were less accepting of others compared to hearing peers. According to Batten et al. (2013), students with hearing impairment experienced repeated rejection and neglect from hearing peers. Hallahan and Kauffman (2003) and Moores (2001) stated that students with hearing impairment

tended to have fewer friends and were at risk for loneliness, which negatively affects social and emotional development. Lukomski (2007) found that students with hearing impairment had more coping difficulties and had difficulty within the school context. They did not feel satisfied with their abilities, did not feel comfortable with a group of friends, and thought that they did not solve problems well. According to Powell, Hyde, and Punch (2014), students with hearing impairment faced the highest level of difficulty in participating in lectures, group discussion, and had low expectations to develop new relationships on campus.

In this study, in order to enhance social skills of hearing students and students with hearing impairment in inclusive classroom, cooperative working was implemented. According to Johnson and Johnson (1994), social skills may be learned more effectively in cooperative contexts than in isolation activities. In cooperative learning, students enhanced their social skills by getting to know each other, communicating accurately, accepting and supporting each other, and resolving conflicts constructively. Johnson (2003) asserted that working in cooperative groups was a crucial factor in creating a long-lasting friendship which required students to share ideas, feelings, and reactions, information and resources as well as to accept, support, and work cooperatively with other group members.

Cooperative learning is an approach to teaching that makes maximum use of cooperative activities (J. Richards & Rodgers, 2001) which can create skillful lessons that engage students in learning (Kagan, 1989). According to Putnam (1995), the use of cooperative groups benefits three broad categories of learning outcomes: effort to achieve, positive interpersonal relationship, and psychological adjustment. In cooperative learning, students have to work together to accomplish goals that are

beneficial to themselves and other group members (D. Johnson & Johnson, 1994). According to Richards and Rodgers (2001) and Johnson and Johnson (1994), cooperative learning provides opportunities for students to develop (1) positive interdependence that occurs when students are linked with each other in a way that one cannot succeed unless everyone succeeds, (2) social skills that promote methods of student interaction to coordinate efforts and achieve goals, (3) individual accountability that occurs when each group member is held individually accountable to do their share of the work, (4) structuring and structures that involve ways of organizing students in a group, and (5) group information that involves setting up groups and each group member is assigned a specific role.

In cooperative efforts, students are likely to have higher reasoning, more new ideas, and greater transfer of what had learned to another situation (D. Johnson & Johnson, 1994). Johnson and Johnson also asserted that students work in cooperative groups tend to perceive themselves and others in a different and realistic way that allow students to compare their own and other's abilities which helps promote a basic self-acceptance as a competent person.

In this study, the social skills are associated with students' behaviors towards openness, sharing, acceptance, support, and cooperative intentions were investigated via students' trusting behaviors during the learning task and learning process.

2.2.3 Learning engagement

The issue of learning engagement is essential to find solutions for students with hearing impairment (Lang, 2002). Learning engagement goes beyond participation and does not happen by mere presence in the classroom (UNESCO, 2008). Engagement involves a variety of activities and interaction where learners

integrate academic structure and social life of their institutions both inside and outside the classrooms (Stinson & Antia, 1999). It is generally agreed that the involvement in academic and social domains are important factors to enhance students' learning engagement (Richardson et al., 2004).

Many researchers stated that learning engagement is typically described via three components: behavioral, affective, and cognitive (Appleton, Christenson, & Furlong, 2008; Trowler, 2010). Behavioral engagement involves students' active participation in classrooms such as attend class, arrive on time, prepare for class, ask questions, take part in classroom activities, complete homework, active in extracurricular activities, and make an effort towards learning (Appleton et al., 2008; D. Brown, 2004; Jablon & Wilkinson, 2006). Affective engagement involves emotions associated with ideas or actions including feelings, attitude about learning, and value which describe an inner quality of concentration to succeed in school (Barkley, 2010; Jablon & Wilkinson, 2006; McMahon & Portelli, 2004). Cognitive engagement involves students' mental effort in the learning process including the six levels of learning from Blooms' taxonomy: remembering, understanding, applying, analyzing, evaluating, and creating (Barkley, 2010; Trowler, 2010).

Many studies found that learning engagement of students with hearing impairment in higher education was one of the most difficult goals to meet in the inclusive classroom environment (Lang, 2002; Richardson et al., 2004). Learning engagement for students with hearing impairment would be influenced by the ease of communication in classrooms (Richardson, Marschark, Sarchet, & Sapere, 2010). Students with hearing impairment failed to achieve satisfactory academic integration when they felt that they could not communicate effectively with their teachers and

peers (Richardson et al., 2004). According to Lang (2002), students with hearing impairment faced problems in participating in inclusive classrooms in terms of instructional pace, numbers of speakers involved, and language and cultural differences. Foster, Long, and Snell (1999) stated that students with hearing impairment only felt greater participation in the classroom when they understood learning material. Students with hearing impairment were able to engage with the underlying meaning of the learning materials as hearing students were but students with hearing impairment might have a relatively greater difficulty than hearing students in relating ideas on different topics in specific aspects of studying (Richardson et al., 2000). Foster et al. (1999) also found that major reasons that students with hearing impairment did not perform well were lack of preparation, lack of motivation, and poor English skills.

In this study, in order to enhance the learning engagement of students with and without hearing impairment, behavioral, affective, and cognitive engagement were implemented in order for students to actively participate in inclusive English classrooms. Behavioral engagement involved students' active participation in classrooms in terms of attendance, preparation, attention, asking questions, contributions, and effort. Affective engagement involved students' emotions, attitudes, and value towards course content, class activities, and teaching methods. Cognitive engagement involved students' application of cognitive levels according to Bloom's taxonomy: remembering, understanding, applying, analyzing, evaluating, and creating during the learning task and learning process.

2.3 Teaching Approaches in Inclusive Classrooms

In higher education, every student has to reach the same standard criteria for the general education curriculum of their institutions. The appropriate teaching approaches in inclusive classrooms should provide opportunities for students with disabilities to progress in the general education curriculum in order to reach the same standard as regular students do (Haager & Klingner, 2005). According to the Bureau of Special Education Administration (2010), the institutions should employ accommodation and adaptation to ensure access of students with disabilities to the general curriculum so that they can meet the educational standards (see Figure 2).

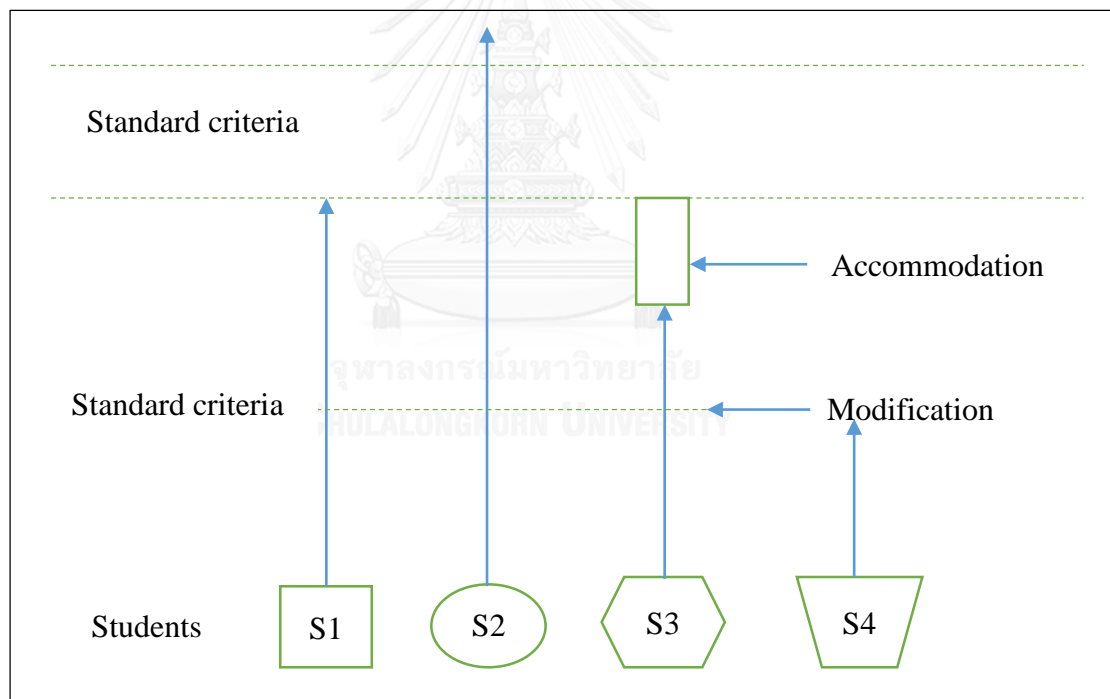


Figure 2 Accommodation, Adaptation, and Modification

As Figure 2 shows, accommodation, adaptation, and modification are implemented to support students with and without disabilities. S1 is a regular student who can study and meet standard criteria without any accommodation provided. S2 is a student who has higher ability than standard criteria, so learning materials and

activities should be adapted in order to match the student's ability. S3 is a student with disability who can study and meet the standard criteria, but accommodation needs to be provided for the student to fully participate in a general curriculum with regular students. S4 is a student with disability who cannot meet the standard criteria for the general curriculum, so the standard criteria has to be modified for the student to participate in a general curriculum with regular students.

2.3.1 Accommodation

Accommodation is the act of making the general environment appropriate and accessible for students with disabilities in order to fully participate in the general curriculum similar to regular students (The Bureau of Special Education Administration, 2010). The accommodation for students with hearing impairment to fully participate in general curriculum includes sign language interpreters, extra time for exams, assistive technology, and note-taking support (Office of the Higher Education Commission, 2012; The Ohio State University, n.d.; University of Northern Colorado, n.d.).

Many studies showed that the effectiveness of support services for students with hearing impairment were sign language interpreters and note-takers (Cawthon, 2011; Lang, 2002; Powell et al., 2014). Students with hearing impairment who learned through skilled sign interpreters could correctly answer as many questions as hearing students (Lang, 2002). However, the accuracy and effectiveness of interpreting depended on content knowledge of the sign interpreters (Lang, 2002; Powell et al., 2014). If the sign interpreters were familiar with the content, a lecture may be signed more appropriately and with fewer misinterpretations. A majority of students with hearing impairment thought that the note-taker was a very useful

support mechanism which facilitated students with hearing impairment to recall and recognition what they had learned (Powell et al., 2014). In addition, Cawthon (2011) asserted that the most common test accommodation for students with hearing impairment were test directions being interpreted (81%), extra time (73%), and test items being interpreted (55%). However, test directions being interpreted and extra time allowed for standardized assessment, whereas test items being interpreted was a controversial accommodation because it involved in a non-standardized interpretation of the test items.

2.3.2 Adaptation

Adaptation is the act of making materials, learning activities, and assessment to be accessible and appropriate for students with and without disabilities (The Bureau of Special Education Administration, 2010). This adaptation is designed to meet the individual learning needs of students and to ensure access to the general education curriculum of all students (Haager & Klingner, 2005). According to Lee, Wehmeyer, and Palmer (2010), the curriculum modifications on the general education increased academic response, task management, and competing response of students with disabilities.

In inclusive classrooms, there are many instructional practices such as differentiated instruction (Broderick, Mehta-Parekh, & Reid, 2010; Choate, 2004; Haager & Klingner, 2005), a whole child approach, performance-based assessments, collaboration (Barnes, 2009), and universal design for learning (Haager & Klingner, 2005; Salend, 2008). However, many researchers (Hall, Strangman, & Meyer, 2003; Udvari-Solner, Villa, & Thousand, 2005) suggested that the teaching practices that

allow teachers to adapt learning materials, activities, and assessment suitable for inclusive classrooms use differentiated instruction and universal design for learning.

According to Udvari-Solner, Villa, & Thousand (2005), universal design for learning is “a systematic decision-making method for differentiation” (p.138) that requires teachers to consider the three elements of differentiated instruction: content, process, and product in order to provide a variety of ways to design materials, activities, and assessment. Differentiated instruction (DI) allows the teacher to differentiate elements of curriculum in order to engage and maximize the learning potential of individual student (G. Gregory & Chapman, 2007; Hall et al., 2003; Tomlinson, 2001). Universal design for learning (UDL) is a principle for designing curriculum that provides every student with equal opportunity to learn and supports the different learning needs of diverse students in inclusive classrooms (Choate, 2004; Haager & Klingner, 2005; Hall et al., 2003). Thus, the integration of differentiated instruction and universal design for learning are complementary to serve the needs of the learners in inclusive classrooms.

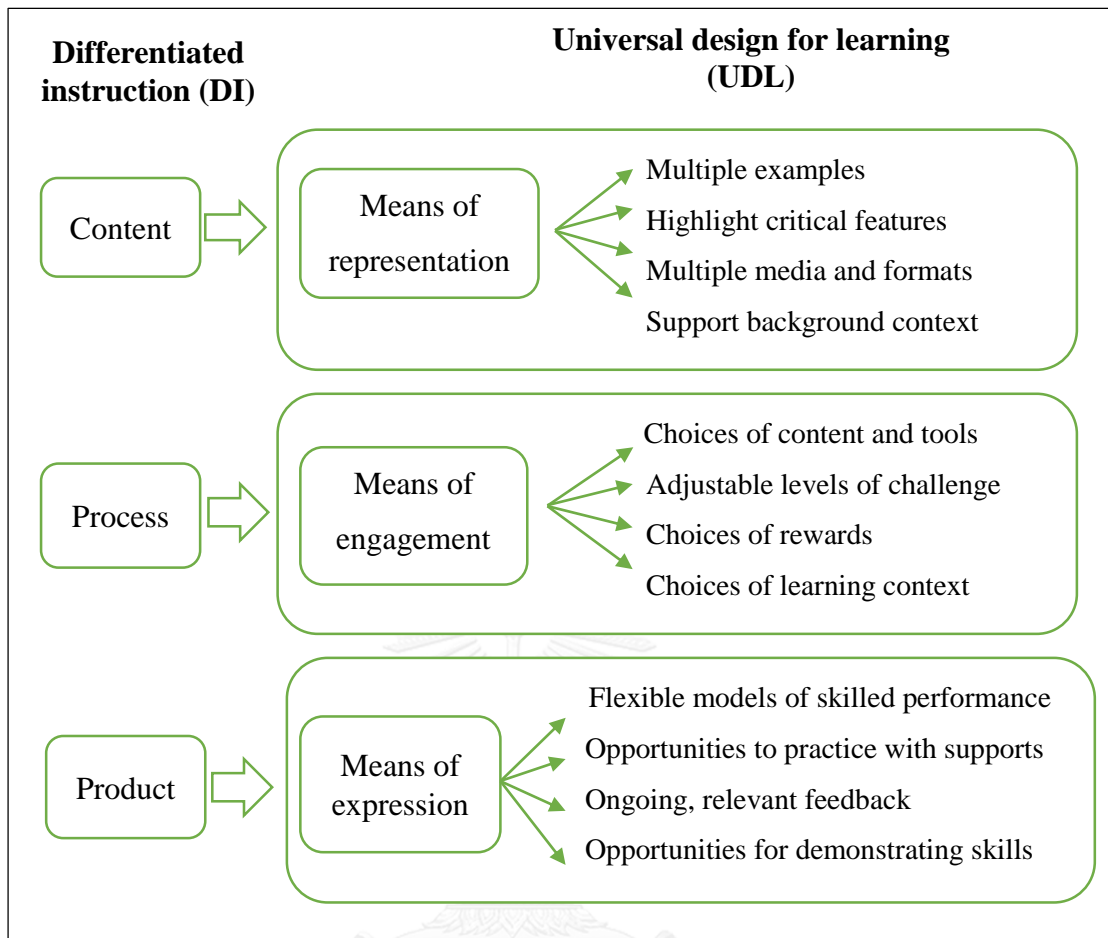


Figure 3 Theoretical Framework of Differentiated Instruction and Universal Design for Learning

As Figure 3 shows, differentiated instruction and universal design for learning are interconnected by using the three elements of differentiated instruction: content, process, and product that directly reflect the three goals of universal design for learning: means of representation, engagement, and expression in order to adapt materials, activities, and assessment (Hall et al., 2003). Content requires means of representation of learning materials by providing multiple examples, highlighted critical features, multiple media and format, and background context. Process requires means of engagement in doing class activities by providing choices of content and tools, adjustable levels of challenge, choices of rewards, and choices of

learning context. Product requires means of expression of what have learned by providing flexible models of skilled performance, opportunities to practice with support, feedback, and flexible opportunities for demonstrating skill.

In conclusion, the integration of differentiated instruction (DI) and universal design for learning (UDL) provides effective teaching to all students, especially students with disabilities. DI and UDL increase access to the general curriculum for students with disabilities by varying the content, learning activities, and modes of assessment in order to response to their special needs and support the growth of each student.

2.3.3 Differentiated instruction (DI)

In classrooms with diverse students who have different backgrounds, experiences, abilities, and learning profiles, it is important for teachers to embrace this diversity to support the needs of individual students (G. Gregory & Chapman, 2007). A 'one-size-fits-all' approach where every student receives the same instruction might not be effective enough for various students with different learning needs in inclusive classrooms (Haager & Klingner, 2005).

Differentiated instruction is the technique that begins with consideration of the needs of a diverse range of students (Baecher, 2011; G. Gregory & Chapman, 2007). Thus, differentiated instruction is essential in inclusive classrooms because it provides opportunities for students to bring a variety of their needs, experiences, abilities, and styles to their learning (Haager & Klingner, 2005).

Differentiated instruction is flexible to adjust the curriculum to students rather than expecting students to adjust themselves to the curriculum (Hall et al., 2003). Though the instruction may be differentiated to maximize the learning potential of

each student, the learning goals of differentiated instruction are the same for all students to ensure that all students have optimal learning opportunities within the core academic curriculum (Baecher, 2011; Haager & Klingner, 2005; Subban, 2006).

Differentiated instruction has been described as a teaching practice which was adapted to meet an individual need of students (O'Brien, 2000). Gregory and Chapman (2007) defined differentiated instruction as “a philosophy that enables educators to plan strategically in order to reach the needs of the diverse learners in today classrooms to achieve targeted standards” (p. 2). Tomlinson et al. (2003) asserted that differentiation can be defined as “an approach to teaching in which teachers proactively modify curricula, teaching methods, resources, learning activities, and student products to address the diverse needs of individual students” (p. 121).

There are many ways to differentiate instruction to support the diverse needs of students such as climate for learning, learning style, multiple intelligences, assessment, instructional strategies, and curriculum (G. Gregory & Chapman, 2007). However, this study aimed to develop an English instructional management model wherein both students with and without disabilities had to reach the same standard criteria for the curriculum, necessitating differentiated instruction according to three elements of the curriculum: content, process, and product (Broderick et al., 2010; G. Gregory & Chapman, 2007; Tomlinson, 2001).

According to Tomlinson (1999), the curriculum elements should be differentiated when teachers see students' needs and when the curricular adaptation helps students better understand important ideas and uses important skills more effectively. According to Broderick, Mehta-Parekh, and Reid (2010), differentiated

instruction through elements of the curriculum: content, process, and product help teachers adjust materials, teaching methods, and assessment alternatively to support the needs of students with and without disabilities in inclusive classrooms.

2.3.3.1 Content. Content includes what is to be taught, what levels of proficiency are to be demonstrated, and what context and materials are necessary to allow students with and without disabilities to learn (Udvari-Solner et al., 2005). In inclusive classrooms, the content differentiation should address the same concept with all students, but teachers could vary content in order to match special needs of individual students and engage students in learning (Baecher, 2011; Salend, 2008; Tomlinson et al., 2003).

2.3.3.2 Process. Process involves activities that are designed to ensure that students use key concepts that they have learned in class to make sense of essential ideas and information (Tomlinson, 2001). Tomlinson also asserted that process is an essential component of instruction which helps students progress from a current point of understanding to a more complex level of understanding. Thus, process differentiation involves supporting learners when doing activities in a classroom (Tomlinson, 1999).

2.3.3.3 Product. Product represents students' extensive understandings and applications (Tomlinson, 2001). Tomlinson also asserted that product should help students rethink, use, and extend what they have learned in class. Thus, product differentiation should vary based on students' learning needs to help them demonstrate their understanding and application according to their preferences (Broderick et al., 2010).

In conclusion, differentiation instruction (DI) provides flexible teaching to adjust the general curriculum which helps support the needs of both students with and without disabilities. The differentiation of three elements of curriculum (content, process, and product) provide opportunities for teachers to adjust materials, learning activities, and modes of assessment to ensure students with and without disabilities to reach the same standard criteria of general education.

2.3.4 Universal design for learning (UDL)

Universal design for learning (UDL) is a principle for designing curriculum by using flexible instructional materials, teaching methods, and assessment in order to provide access to a wide range of students with and without disabilities in inclusive classrooms (Haager & Klingner, 2005).

The concept of universal design for learning is inspired by the universal design movement in architecture and the design anticipates the needs of persons with disabilities (Choate, 2004). Universally designed structures are more usable not only for individuals with disabilities but also has led to improved usability for everyone (Hall et al., 2003). Universal design for learning has been applied to educational settings in order to provide all learners with opportunities to access and succeed in the general education curriculum (Salend, 2008). For example, closed captions on television and movies can support not only learners with hearing impairment, but also persons learning the language for listening comprehension (Teaching excellence in adult literacy, 2010).

According to Hall et al. (2003), universal design for learning is “an approach designed to increase flexibility in teaching and decrease the barriers that frequently limit student access to materials and learning in classrooms” (p. 2). Hall and Stahl

(2006) defined universal design for learning as “a framework to guide educators in maximizing learning opportunities for increasingly diverse students” (p. 70).

According to Salend (2008), universal design for learning refers to “designing flexible curriculum, and teaching, and assessment materials, and strategies so that they can be easily used to promote the learning of all (p. 328).

Universal design for learning addresses three interconnected learning networks: recognition, strategy, and affective networks (Hall et al., 2003). These three networks revolve a variety of alternative ways for students to participate in learning by using means of representation, expressions, and engagement (Hall & Stahl, 2006; Hall et al., 2003).

2.3.4.1 Recognition networks. The recognition networks support recognition learning by providing means of representation (Hall et al., 2003). The means of representation consider multiple ways that make the content more accessible and provide more opportunities for all students to acquire information in order to succeed in classroom learning which enable learning engagement (Courey, Tappe, Siker, & LePage, 2012; Hall & Stahl, 2006; Spencer, 2011).

To provide means of representation, there are four teaching techniques to support the recognition networks: (1) support background context, (2) provide multiple examples, (3) highlight critical features, and (4) use multiple media and formats (Hall et al., 2003).

2.3.4.1.1 Supporting background context. Providing background of the learning content helps activate students’ background knowledge about what they are going to learn which aids comprehension, allows students a look at situations, and increases level of interest (Harmer, 2001).

2.3.4.1.2 Highlight critical features. Highlighting key concept and key information helps students know which features of the lesson are important and easily get into the main concept of the lesson (Luckner & Friend, 2006).

2.3.4.1.3 Provide multiple examples. Multiple examples helps students flexibly access to the learning content and better understand the lesson (Brinton, 2001).

2.3.4.1.4 Provide multiple media and formats. Multiple media and formats provide a variety of materials in different formats to help engage students and meet different learning needs of all students (Graves, 2000; Salend, 2008).

2.3.4.2 Affective networks. Affective networks support affective learning by providing means of engagement (Hall et al., 2003). The means of engagement determine learners' motivation, interest, and emotional connection with activities, tasks, or materials (Hall & Stahl, 2006).

To provide multiple means of engagement, there are four teaching techniques to support the affective networks: (1) adjust levels of challenge, (2) choices of learning context, (3) choices of content and tools, and (4) choices of rewards (Hall et al., 2003).

2.3.4.2.1 Adjust levels of challenge. To adjust levels of challenge, learning activities are adjusted to suit students' needs to provide opportunities for students to participate in class activities (Hall et al., 2003).

2.3.4.2.2 Choices of learning context. Choices of learning context provide opportunities for students to participate in class activities such as work alone, with a partner, a small group, or the whole class which help diversify the available learning contexts (Spencer, 2011).

2.3.4.2.3 Choices of content and tools. Choices of content and tools provide opportunities for students to do activities by choosing from a variety of content and tools such as video, text, audio, or Internet which help increase students' enthusiasm and meet different learning needs of all students (Graves, 2000; Hall et al., 2003).

2.3.4.2.4 Offer choices of rewards. Choices of rewards are ways to motivate students. However, there is a suggestion that teachers should offer choices of rewards that motivate students' intrinsic interest (Spencer, 2011).

2.3.4.3 Strategic networks. Strategic networks support strategic learning by providing means of expression (Hall et al., 2003). The means of expression help students in planning and performing tasks which enable students to demonstrate what they have learned in the most effective way (Hall & Stahl, 2006).

To provide means of expression, there are four teaching techniques to support the strategic networks: (1) flexible models of skilled performance, (2) opportunities to practice with supports, (3) ongoing, relevant feedback, and (4) flexible opportunities for demonstrating skill (Hall et al., 2003).

2.3.4.3.1 Flexible models of skilled performance. Flexible models of skilled performance provide options for students to demonstrate what they have learned such as example of completed work or steps to complete work which help students distill the critical features of a process (Spencer, 2011).

2.3.4.3.2 Opportunities to practice with supports. Providing opportunities to practice with support ensures student success and independence. Since some tasks are more complex, providing options to work with support such as work in pair or a small group helps students focus on strengthening their abilities and achieving their goal (Hall et al., 2003).

2.3.4.3.3 *Ongoing, relevant feedback.* Providing ongoing and relevant feedback helps students know if they are practicing effectively, or which aspects they need to change that could guide students on how to improve their learning and encourage students to give additional effort (Salend, 2008).

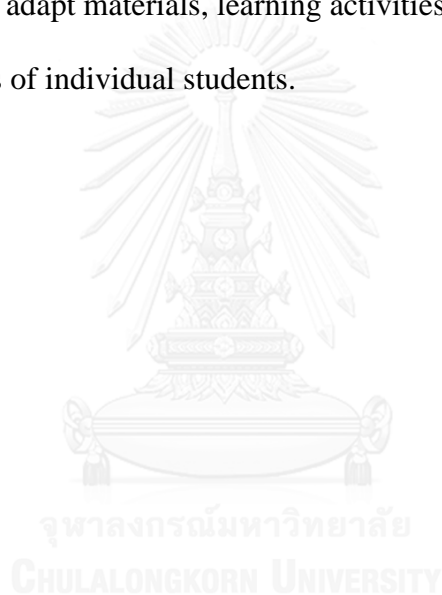
2.3.4.3.4 *Flexible opportunities for demonstrating skill.* Offering flexible opportunities for demonstrating skill allows students to express their understanding through the most effective modality based on their strength and preferences (Hall et al., 2003).

In conclusion, universal design for learning (UDL) provides techniques to differentiate curriculum by providing means of representation to make learning materials more accessible, providing means of engagement to adapt learning activities, and providing means of expression for students to express their learning through their most effective modality in order to promote equal opportunity and support the different learning needs of diverse students in inclusive classrooms.

2.4 Chapter Summary

Inclusive education was seen as the least restrictive environment that provides opportunities for students with disabilities to participate in regular classrooms which helps benefit academic and social development. In the field of deaf education, many experts agreed that inclusive education is appropriate for students with hearing impairment. However, in inclusive English classrooms with students with hearing impairment, teaching English as a second or foreign language is very challenging. Many problems were found in inclusive English classrooms but the most significant problems were language learning, social skills, and learning engagement problems. To cope with these three problems, accommodation and adaptation were employed to

support both groups of students. The sign language interpreters the note-taker were very beneficial to accommodate students with hearing impairment full participation in inclusive English classrooms. Differentiated instruction and universal design for learning principles were integrated to adapt learning materials, activities, and assessment to support diverse needs of both groups of students. The three elements of differentiated instruction: content, process, and product were connected with the three goals of universal design for learning: means of representation, engagement, and expression in order to adapt materials, learning activities, and modes of assessment in order to suit the needs of individual students.



CHAPTER III

RESEARCH METHODOLOGY

This chapter describes the research methodology that was employed to develop the English instructional management model in order to enhance English learning achievement, social skills, and learning engagement. The chapter presents the information in the order of the four phases of the research processes including situation analysis, model development, model implementation, and model evaluation.

3.1 Research Design

The purpose of this study was for a model development using a research and development method. The model development helped the researcher focused on solving specific problems that occurred in inclusive English classrooms. The model development was used to try out new practices which helped the researcher identify problems, act in ways that could help fix those problems, and observe the outcomes whether the new practice had worked (B. Johnson & Christensen, 2004; Tomal, 2010).

In this study, processes of the research design consisted of four phases: situation analysis, model development, model implementation, and model evaluation (see Figure 4).

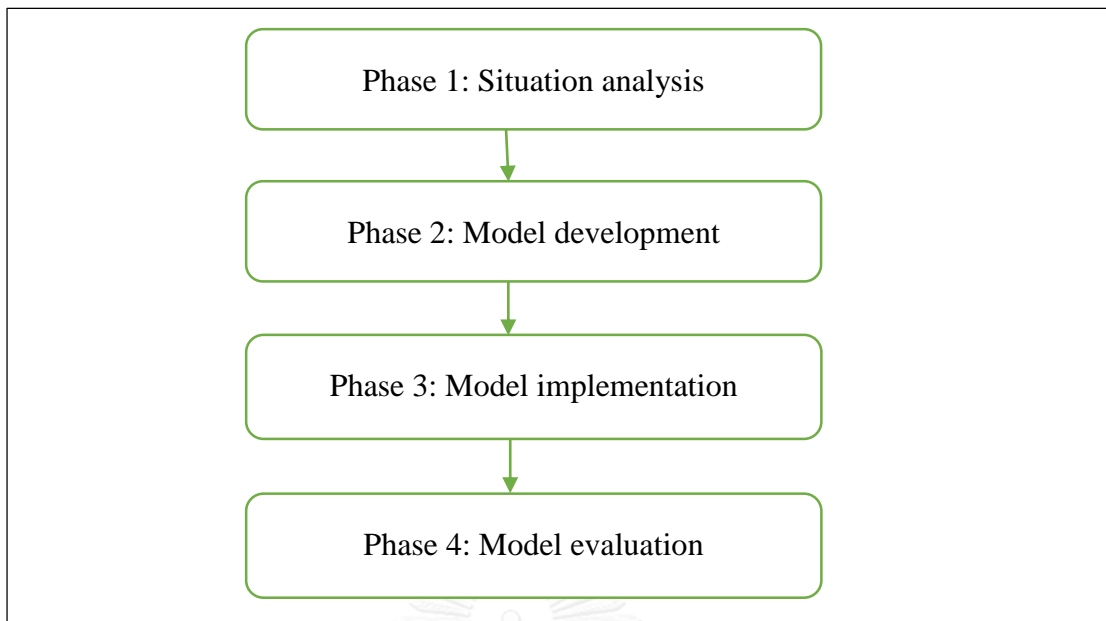


Figure 4 Research Processes

As Figure 4 shows, before developing the model, the situation analysis was conducted to gain understanding of the current situation of inclusive English classrooms in Thailand. Then, the model was developed based on the underlying principles of universal design for learning and differentiated instruction with considerations of the findings from the situation analysis. After that the model was implemented in one university that provided the policy for inclusive education. Finally, the model was evaluated using both quantitative and qualitative data to evaluate the effects of the model on English learning achievement, social skills, and learning engagement.

3.2 Situation Analysis

In this study, the situation analysis was conducted to help build understanding and identify potential problems about the current situation of inclusive English classrooms in Thailand. The findings of the situation analysis was used to conceptualize the framework to develop the English instructional management model.

The situation analysis was conducted in five areas: inclusive education, adaptation, accommodation, social interaction, and learning engagement. Perceptions about inclusive education of teachers, sign language interpreters, students with and without hearing impairment were examined to see whether these participants see the importance of inclusive education or not. Adaptation of materials, teaching techniques, and classroom assessment were also examined to see how classroom teachers provide adaptation in inclusive classrooms. Accommodation provided by the university was also examined to see benefits of the accommodation for students with hearing impairment. In addition, students with and without hearing impairment were examined to see how they interacted with each other and how they engaged in classroom activities during the lesson.

The situation analysis was conducted in two public universities that had the policy to provide inclusive education for students with disabilities and had the highest number of students with hearing impairment. Two classrooms of English foundation course at each university were chosen to participate in this study (see Table 1).

Table 1

Sample of the Situation Analysis

Students	1st classroom	2nd classroom
Hearing student	42	21
Student with hearing impairment	7	3
Student with visual impairment	1	-
Autistic student	-	2
Total	50	26

3.2.1 Data collection

The situation analysis was collected using classroom observation and semi-structured interview.

3.2.1.1 Classroom observation. The two inclusive English classrooms were observed once a week for four weeks. During the classroom observation, the role of the researcher was a non-participant observer. The researcher did not participate in any class activities or interact with the students or the classroom teachers during the observations. The observer took observation filed notes on what happened in the classrooms such as seating arrangement, materials, classroom activities, behaviors of participants, and interactions among the participants.

3.2.1.2 Semi-structured interview. The semi-structured interview was guided by a list of questions, which were organized around five topics: inclusive education, accommodation, adaptation, social skills, and learning engagement.

To establish validity, the semi-structured interview was validated by three experts in the field of inclusive education to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items. Overall, the three experts remarked that the guided questions could be used for the semi-structured interview to investigate the students' learning experiences in inclusive English classrooms. However, the experts provided some comments on items of adaptation, social skills, and learning engagement for all participants (see Appendix A).

Afterward, the semi-structured interview was piloted with one English teacher who has taught English in inclusive classrooms, one sign language interpreter, one

hearing student, and one student with hearing impairment (with the support from the sign language interpreter) to check the clarification of the guided questions. Overall, the responses from the pilot showed that the guided questions were clear and could be used for the semi-structured interview. Therefore, no further revision was needed. After that, the final version of semi-structured interview were presented.

The semi-structured interview was conducted after the classroom observations with two classroom teachers, two sign interpreters, six hearing students, and six students with hearing impairment from the observed classes.

The participants were interviewed by the researcher in Thai. Before the interview, the purpose of the interview was explained to the participants. The participants were asked whether they wanted to participate in the interview and indicated their acceptance by filling out the consent form. The researcher interviewed the participants one by one. For the students with hearing impairment, the interview was assisted by a sign interpreter. The researcher asked a question to the sign interpreter. Then the sign interpreter used sign language to communicate with the students with hearing impairment and interpreted the answers to the researcher. Each interview took around 30-60 minutes. Audio recording was used to record the entire interview for later transcriptions and data analysis.

3.2.2 Data analysis

To analyze the data from the situation analysis, qualitative method was used to obtain the data, two processes were employed: data coding and memo writing (Charmaz, 2006).

3.2.2.1 Data coding. After the interview was transcribed, the transcription was read word-by-word and line-by-line to look for units of meaning that revealed

information about social skills and learning engagement and created initial coding. Then, the initial coding that had similar meanings were sorted into subcategories. Finally, each subcategory was integrated into a major category and developed into a concept.

3.2.2.2 Memo writing. After coding the data, a memo of each set of data was created. The memo included assumptions and evidence that the researcher discovered by the data coding.

To ensure reliability of data coding, an intra-coder was employed. The researcher herself read, coded the data, and used memos to reflect her ideas several times without making an immediate conclusion.

3.2.3 Findings

The findings of situation analysis were presented in five areas: inclusive education, adaptation, accommodation, social interaction, and learning engagement. The detailed findings of the situation analysis were reported in Suthipiyapathra, Vibulphol, and Prongsantia (2015).

3.2.3.1 Inclusive education. The findings illustrated the perceptions of the teachers, sign interpreters, hearing students, and students with hearing impairment about inclusive English classrooms. The findings showed that inclusive English classrooms had both benefits and drawbacks.

All participants agreed that students with and without hearing impairment got benefit from English inclusive classrooms. Both groups of students asserted that inclusive English classrooms gave them an opportunity to make new friends and learn to adapt themselves with people who are different from them. Students with hearing impairment stated that they felt happy to study English in the same classroom with

hearing students because when they did not understand or needed help, hearing students and sign interpreters could help them.

Hearing students also asserted that inclusive classrooms could widen their visions that people are different. Hearing students gained awareness of individual differences, that students with hearing impairment were different due to physical differences but their minds were the same as hearing students. The classroom teachers mentioned that hearing students tended to gain empathy from working in inclusive classrooms so that they attempted to help students with hearing impairment as much as they could. However, due to communication difficulty, students with hearing impairment could not contribute much when working in inclusive classrooms. It was very difficult for them to communicate with hearing students. As a result, students with hearing impairment tended to stay with their own group and separated themselves from hearing students.

3.2.3.2 Adaptation. Adaptation examined how classroom teachers adapted materials, teaching techniques, and assessment in order for students with and without hearing impairment could participate in class activities.

3.2.3.2.1 Materials. The findings showed that the teachers tended to adapt materials by using a lot of visual aids during classroom activities compared to other classrooms that did not have students with hearing impairment. Both groups of students, especially students with hearing impairment, stated that visual aids could help them understand the lesson better. The sign interpreters added that since students with hearing impairment are unable to hear, it was easy for them to forget what they had learned. So, pictures with captions, especially Thai captions, which students with hearing impairment were familiar with, helped them better remember the lesson

However, the teachers added that at the university level, students with hearing impairment should be treated as regular students in order for them to learn how to learn by themselves and help themselves. The learning materials should be created and adapted so that students with hearing impairment can learn by themselves. The teachers added that self-learning materials or the use of technology could help students, especially for students with hearing impairment, who tended to stick with the sign interpreters, to learn something outside the books. Thus, the use of technology would help students with hearing impairment learn and search for more information about what they don't learn from the class.

3.2.3.2.2 Teaching strategies. The findings showed that the teachers tried to adapt several teaching techniques to help both groups of students, especially for students with hearing impairment, follow the instruction. The teachers were likely to provide examples of real life situations and compare the differences between Thai and Western cultures. Both groups of students revealed that examples of real life situations made them feel more interested in and understood the lesson better because they had some background knowledge about the provided examples. The classroom teachers also used realia when providing examples to students in order to support students to understand real language used in the real world.

The teachers also highlighted the key concept or vocabulary by pointing or marking in color when introducing the new concept or new vocabulary. One student with hearing impairment stated that he usually forgot what has learned in class, but when the teachers used the highlight technique, he tended to understand the lesson better, at least he could remember the highlight key concept or vocabulary.

The teachers tended to give immediately feedback to students after doing classroom activities so that students knew that what they have done was right or wrong. When giving feedback, the teachers tried to ask some questions to check whether students understand the lesson or not, corrected when students gave wrong answers, and explained to students why their responds were right or wrong. The teachers also gave feedback to students by writing comments on students' homework in order to guide students to improve their learning.

In addition, the teachers sometimes placed students with hearing impairment in a group of hearing students in order for hearing students could help them. Students with hearing impairment explained that even though it was difficult to communicate with hearing students, they liked working in a group with hearing students because hearing students helped explain what they did not understand. Students with hearing impairment also indicated that when working with their hearing-impaired peers, even though it was easy for communication, the assigned tasks were not successful because they all did not understand lesson.

3.2.3.2.3 Assessment. The findings showed that teachers used the same criteria to assess students with hearing impairment and hearing students. However, due to communication difficulty, the classroom teachers tried to adjust the classroom assessment for students with hearing impairment. For a role-play activity, the teachers adapted the assessment for students with hearing impairment by asking them to do a writing task instead of doing the role-play. For the unit tests, the teachers tried to adapt the assessment by designing the test that students with hearing impairment could do it within the provided time with the support of the sign interpreters.

3.2.3.3 Accommodation. Accommodation focused on how the universities accommodated students with hearing impairment in order to support them to participate in inclusive English classrooms. The findings showed that the universities provided sign language interpreters and test accommodation to accommodate students with hearing impairment.

3.2.3.3.1 Sign language interpreters. All participations agreed that the sign interpreters were directly beneficial to students with hearing impairment. During the classroom activities, the sign interpreters were a middle man between students with hearing impairment, the teachers, and hearing students. The sign interpreters helped interpret when the teachers gave a lecture, explained and gave advice to students with hearing impairment during the classroom activities. In addition, when students with hearing impairment had questions or when they got confused in communicating with hearing friends, the sign interpreters helped communicate with the teachers or hearing friends. With the support of the sign interpreters, although students with hearing impairment may not understand the lesson 100%, at least they might understand the lesson better than studying alone. However, the teachers asserted that sometimes they wanted to talk about things outside the book which were beneficial for students, but they had to be aware that the sign interpreters might not know how to interpret what they are talking about.

Because of a lack of sign interpreters, the teachers tried to use friends help friends strategy to support students with hearing impairment. The teachers asked hearing students, who knew the sign language, to sit between students with hearing impairment to help explain when the teachers gave the lectures and helped interpret when the teachers wanted to communicate with students with hearing impairment.

The sign interpreters also suggested that there should be a note-taker for students with hearing students or the teachers might assign hearing students to be the note-taker. Students with hearing impairment asserted that they could not take notes in class as the lectures were too fast for them, so they tended to borrow the notes from hearing students after class. In addition, the sign interpreters added that the teachers should assign hearing students to be a buddy with students with hearing impairment. The buddy may help both groups of students learn to help and socialize with people who are different from them.

3.2.3.3.2 Test accommodation. During the midterm and final examinations, the universities provided test accommodation for students with hearing impairment by providing the sign interpreters to help interpret the test instructions and any questions that students with hearing impairment did not understand. In addition, if students with hearing impairment could not finish the test within the provided time, they could request extra time to do the examination.

3.2.3.4 Social interaction. Social interaction explained how students with hearing impairment and hearing students interact with each other. The findings showed that students with hearing impairment did not have much interaction with hearing students.

Students with hearing impairment mentioned that they tended to interact with hearing students when they asked about homework and asked for help from hearing students. Students with hearing impairment also said that they had to sit with the sign interpreters and looked at the sign interpreters to interpret. So, it was difficult for the students with hearing impairment to interact with hearing students during the class activities.

The sign interpreters added that since the structures of sign language and spoken language were different. When students with hearing impairment write, they tended to follow the structures of sign language. So, hearing students often got confused when reading it and sometimes they could not respond to students with hearing impairment.

3.2.3.5 Learning engagement. Learning engagement focused on how students with hearing impairment and hearing students get involved in classroom activities. The findings showed that due to communication difficulty, students with hearing impairment did not get much involved in classroom activities compared to hearing students.

Due to communication difficulty, students with hearing impairment could not get involved in listening and Q&A activities. The teachers suggested that it might be better to provide an opportunity for students with hearing impairment to ask the teachers by writing questions in Thai. This technique would help students with hearing impairment keep up with the lesson and got more involved in learning activities.

During the listening activities, while hearing students listened to the audio, the teachers asked students with hearing impairment to read an audio script. The findings showed that students with hearing impairment did not get much involved in listening activity. Some students with hearing impairment mentioned that they did not read the audio script. The sign interpreter added that since they could not understand the audio script, they sometimes talked to their hearing impaired peers.

In addition, students with hearing impairment asserted that they did not get much involved in speaking activities. During the role-play, the teachers assigned

students with hearing impairment to work with their own group and asked them to do a writing task instead. While hearing students performed the role-play, students with hearing impairment only looked at the sign interpreters to interpret what hearing students have talked about.

In addition, students with hearing impairment did not get much involved when working in a group of hearing students. Hearing students seem to be concerned whether students with hearing impairment could do the assigned task. Sometimes students with hearing impairment were not assigned responsibility or sometimes they only wrote names or copied some vocabulary. Students with hearing impairment did not have much chance to share their ideas with other group members. However, when working in groups with students with hearing impairment, they could share ideas and discuss with each other, but the assigned tasks were not successful because they all did not understand the lesson. Students with hearing impairment said that they would like the teachers to design classroom activities that provided them opportunities to get more involved in class activities.

3.3 Model Development

To develop the English instructional management model, a framework was conceptualized and instructional procedures were planned. The details of conceptual framework and instructional procedures were as follows:

3.3.1 Conceptual framework

To conceptualize the framework of the model, the findings of the situation analysis, the theoretical framework of differentiated instruction and universal design for learning, and related research were taken into consideration. In this study, the English instructional management model aimed to address the needs of both hearing

students and students with hearing impairment in inclusive English classrooms. Thus, the concepts of accommodation and adaptation were employed.

3.3.1.1 Accommodation. Based on the findings of the situation analysis, the provision of a sign language interpreter and a note-taker were considered as important types of support service in order for students with hearing impairment to fully participate to inclusive English classrooms as hearing students do.

3.3.1.2 Adaptation. To address the problems of materials, activities, and classroom assessment used in inclusive English classrooms, revealed in the situation analysis, the principles of the differentiated instruction (DI) and universal design for learning (UDL) approaches were integrated to differentiate three elements of a curriculum: content, process, and product in order to employ flexible instructional materials, teaching methods, and assessment to provide each learner equal opportunities to learn, and support the different learning needs of the diverse students. Details of each differentiation were presented as the following section.

3.3.1.2.1 Content differentiation. The content was differentiated by supporting background context, highlighting critical features, and providing multiple examples in order to make learning materials more accessible for both groups of students. The background context was supported to activate students' background knowledge by watching the video with captions. Critical features of reading materials were highlighted for students with hearing impairment. The reading font size for hearing students was 12 while the font size for students with hearing impairment was 14 and the key information was highlighted to help students with hearing impairment identify main points and locate essential information. Multiple examples were provided to help students flexibly access the learning content.

3.3.1.2.2 Process differentiation. The process was differentiated by adjusting levels of challenge and providing choices of content. The listening activity was adjusted for levels of challenge by asking hearing students to turn their back to the blackboard while students with hearing impairment watch the video with captions. Several websites of online self-study were provided as choices of content in order for students to practice what they had learned according to their preferences.

3.3.1.2.3 Product differentiation. The product was differentiated by providing opportunities for students to demonstrate their skills according to their strength and to practice with support. The speaking activity was differentiated by offering hearing students to use English to perform the role-play while students with hearing impairment wrote a dialogue in English and used Thai sign language to perform the role-play and the sign interpreter helped interpret for the whole class. The writing activity was differentiated by asking hearing students to revise the draft and submitted the writing task within the class period while students with hearing impairment were provided extended time to revise their draft and submitted their writing task by noon the next day. In addition, students were provided opportunities to practice with support by working in cooperative groups. For the speaking activity, students with hearing impairment worked together in the same group. For listening, reading, and writing activities, one student with hearing impairment was placed in a group of hearing students.

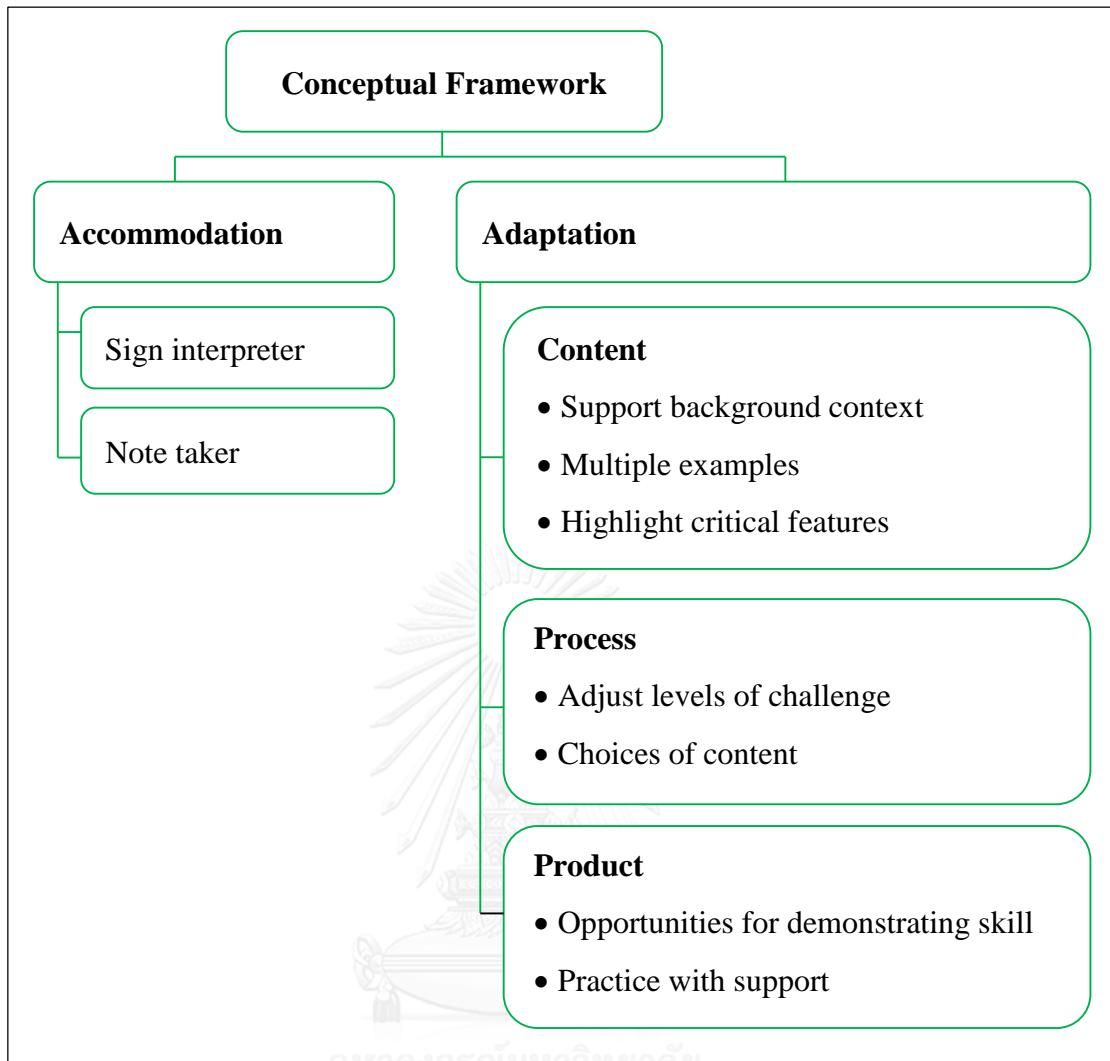


Figure 5 Conceptual Framework

As Figure 5 shows, students with hearing impairment were accommodated by the sign language interpreter and the note-taker. Content, process, and product were differentiated to adapt materials, activities, and classroom assessment. The content was differentiated by supporting background context, highlighting critical features, and providing multiple examples. The process was differentiated by adjusting levels of challenge and providing choices of content. The product was differentiated by providing opportunities for students to demonstrate their skills according to their strength and to practice with support.

3.2.2 Instructional procedures

The instructional procedures were adapted from Tomlinson (2001) which provided opportunities for students to explore the learning concept, engage in materials, share information, make sense of ideas, and apply key concepts they had learned in class. In addition, the sequences of activities in the lesson focusing on four language skills: listening, speaking, reading, and writing, were considered to plan the instructional procedures. Listening and reading lessons were comprised of three procedures: before listening/reading, while listening/reading, and after listening/reading (Wiener & Bazerman, 1999). A speaking lesson was planned based on PPP procedures consisting of presentation, practice, and production (Harmer, 2001). A writing lesson was planned based on writing procedures of Hyland (2012) consisting of consideration of context and topic, generating ideas and gathering data, language input and consideration of genre, creating and reworking a draft, evaluation of draft, and editing for form and style.

In this study, the instructional procedures included four teaching steps: lesson introduction, language input, language task, and conclusion. The details of each step are present in the following section.

3.2.2.1 Lesson introduction. In lesson introduction, learning outcomes are presented to help students focus on the new information and activate their background knowledge about the lesson.

3.2.2.2 Language input. The language input aimed to present knowledge about six aspects of language: grammar, vocabulary, pronunciation, culture, strategy, and generating ideas in order to help students to make sense of the key concepts of the lesson. Grammar helped students explicitly practice and draws students' attention to

linguistic features within the context meaning focused activities (Harmer, 2001; Margaret, 2008; Nunan, 2003). Vocabulary provided students to access to a wide range of language uses and helped students produce language and develop fluency in listening, speaking, reading, and writing (Decarrico, 2001; I.S.P. Nation, 2003; Moir & Nation, 2008). Pronunciation helped students communicate meaningfully and allows students to feel more comfortable when speaking which help reduce the affective filter (A. Brown, 2008; Goodwin, 2001; Murphy, 2003). Culture helped students create meaning and interpret meaning in an appropriate context which involves developing an awareness of how language interrelates with culture when it is used (D. Brown, 1994; Finkbeiner, 2008). Strategy helped students learn how to use a specific technique to solve problems that they encounter during the process of language learning (D. Brown, 1994; Chamot, 2008; Lai, 2009; Oxford, 2001). Generating ideas helped students gather data about what they know about a topic and find additional facts (Harmer, 2001; Hyland, 2012; Sokolik, 2003).

3.2.2.3 Language task. The language task aimed to provide opportunities for students to apply key ideas in the assigned task related to the lesson. For listening and reading tasks, students have to do the listening/reading task and the post listening/reading task. For speaking task, students have to do the speaking task. For writing task, students have to write the draft and revise their draft.

3.2.2.4 Conclusion. The teacher concludes key concepts of what had learned in class and provides several websites of online self-study for students to practice after the class.

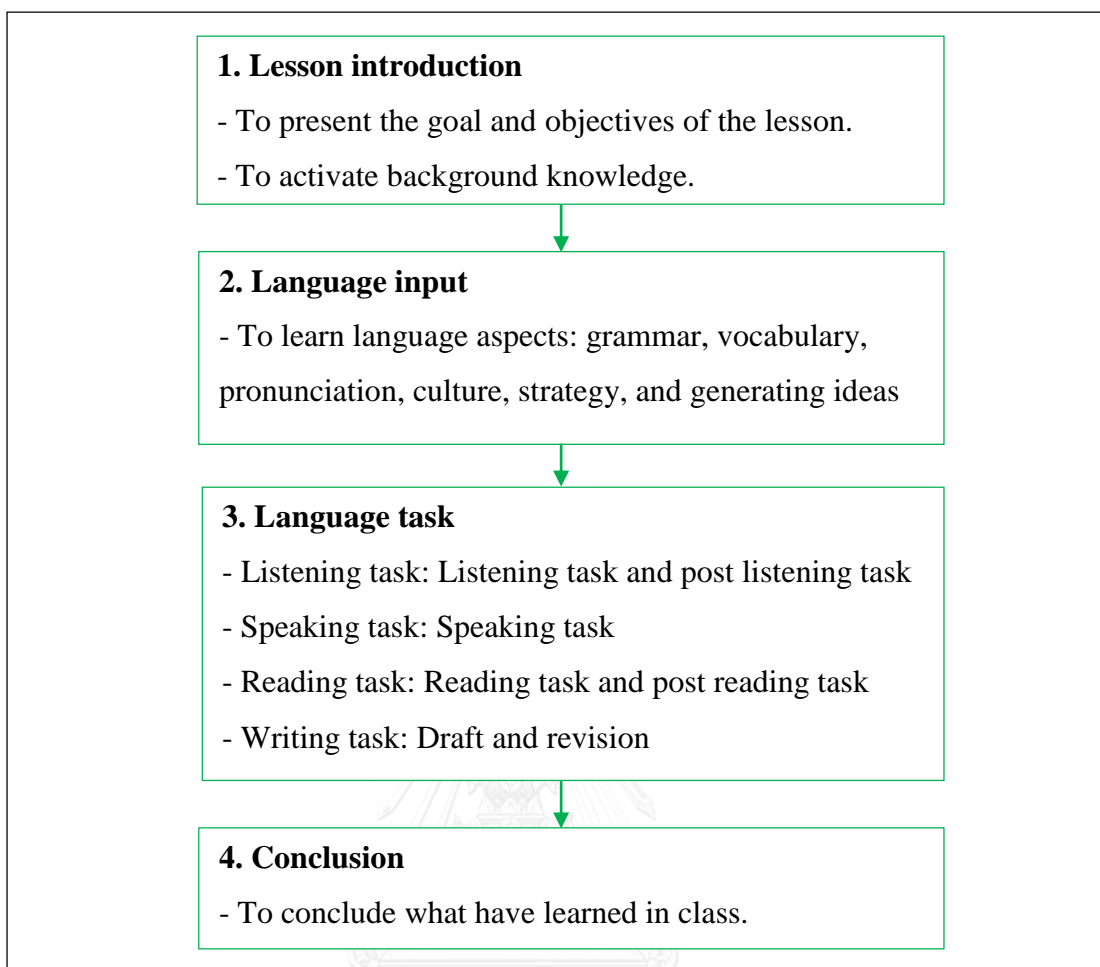


Figure 6 Instructional Procedures

As Figure 6 shows, learning outcomes were presented and students' background knowledge were activated to introduce the lesson. Then, the six aspects of language were presented to help students to make sense of the key concepts of the lesson. Next, students applied key ideas in the assigned task related to the lesson. Finally, key concepts of what had learned in class were concluded.

3.3 Model Implementation

To implement the English instructional management model, the English for communication course was developed. To develop the course, there were two steps involved: formulating goals and objectives and organizing the course content.

3.3.1 Formulating goals and objectives

In this study, the goals and objectives of the English for communication course was formulated based on the Thai Qualification Framework (TQF) for Thailand's Higher Education System which consisted of five domains: ethical and moral development, knowledge, cognitive, interpersonal skills and responsibility, and analytical, communication, and IT skills (see Table 2).

Table 2

Goals and Objectives of the English Instructional Management Course

Domains	Course learning outcomes
Domain 1: Ethical and moral development	1.1 To come to the class on time. 1.2 To submit assignments by the deadline.
Domain 2: Knowledge	2.1 To understand and identify basic usages and structures of language. 2.2 To appropriately use English to demonstrate the local cultural bonds. 2.3 To identify the cultural and traditional aspects of the English and non-English speaking countries.
Domain 3: Cognitive skills	To use English to comprehend, apply, analyze, and criticize systematically and rationally.
Domain 4: Interpersonal skills and responsibility	To work in cooperative groups and appropriately assigned a responsibility for each group member.
Domain 5: Analytical, communication, and IT skills	To use information technology to enhance communication skills

3.3.1.1 Course description. The English for communication course was the prerequisite course for the first year undergraduate students to develop students' four language skills: listening, speaking, reading, and writing skills. The course description was the following:

Listening, speaking, reading, and writing English language skills as the basic of developing language abilities in daily life. Basic English language skills needed for online self-study.

3.3.1.2 Course objectives. The English for communication course was designed for inclusive English classrooms that included students with and without hearing impairment. The course objectives for listening and speaking skills were adapted in order to serve abilities of both groups of students. For listening skill, hearing students had to listen to short messages while students with hearing impairment had to read short messages instead. For speaking skill, hearing students used basic spoken language, but students with hearing impairment had to write in English and use the Thai sign language for their expressions. In addition, the course objectives also included online self-study learning which provided opportunity for students to learn and practice English by themselves which helped facilitate engagement in learning (Blamires, 1999). The course objectives were the following:

1. Hearing students will be able to listen to short messages on familiar topics in daily life. Students with hearing impairment will be able to read short messages on familiar topics in daily life.

2. Hearing students will be able to use basic spoken English in word, phrase, and sentence levels for daily communication. Students with hearing impairment will be able to write English in word, phrase, and sentence levels for daily communication.

3. Both groups of students will be able to read short messages such as announcement, e-mail, and labels.

4. Both groups of students will be able to write personal information, describe events, and write a paragraph.

5. Both groups of students will be able to use English language skills for online self-study.

3.3.2 Organizing the course content

The English for communication course was designed as a topical syllabus (J. Richards, 2001) which was built around a theme 'The first year's university students' life'. The course content was organized for 12 lessons under three topics: making friends, university and town, and problems for freshmen. Each topic consisted of four language skills: listening, speaking, reading, and writing which provided opportunities for students to practice four language skills according to the goals and objectives of the course (see Appendix B).

To ensure validity, the long-range plan and the four lesson plans of writing, speaking, listening, and reading (see Appendix C) were sent to experts in the fields of inclusive education, instruction, and language assessment in order to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items

Overall, the four experts remarked that the lesson plans for four language skills were appropriate and could be used for inclusive English classrooms. However, the experts provided more comments which were summarized into two categories: instructional procedures and video materials. In terms of instructional procedures, the

experts commented that some pictures were confusing, the role-play activity should provide more specific information for each role and provide more roles for students to choose, and students should conclude what they had learned in class themselves. In the area of video materials, the experts suggested that the video was too fast and the captions were not easily seen. Then, each lesson plan for listening, speaking, reading, and writing skills were revised according to the experts' comments.

Afterward, the four lesson plans consisting of listening, speaking, reading, and speaking lesson plans were piloted to ensure the reliability. The pilot study was conducted with one inclusive English classroom consisting of four students with hearing impairment and 36 hearing students. The four lesson plans were piloted on Friday from 12.50 – 15.20 p.m. for four weeks consecutively to see whether the teaching steps, time allotment, materials, and learning activities of each language skill were practical. Since the pilot study was conducted on Friday, the teacher coordinated with the sign language interpreter on Thursday for preparing the lesson. The teacher explained each step of the lesson plan, the reading materials, slides, and the class activities in order for the sign interpreter to know how to interpret to students with hearing impairment. The writing lesson plan was the first week to be piloted, followed by speaking, listening, and reading lesson plans.

Overall, the teaching steps, time allotments, and materials, and learning activities of each lesson plan were practical and suitable for students' abilities. However, there were some details in each lesson that needed to be adjusted according to the results of the pilot study as follows:

3.3.2.1 Writing lesson plan. It was found that the time for lesson introduction was too short to activate students' background knowledge. Also, since one student

with hearing impairment had to join hearing student groups, some time was taken to form the groups. In light of these difficulties, the peer feedback and draft revision activities were reduced 5 minutes each in order to add 5 more minutes for the lesson introduction and add 5 more minutes for the language input step in order to give more time for students to form the groups. In addition, students mentioned that they did not understand the lecture that taught in English, so main concepts of the lesson were translated into Thai in order for students to understand the lesson better.

3.3.2.2 Speaking lesson plan. It was found that the time for practicing speaking activity was a bit short because hearing students wanted to watch the video again in order to notice the accents of the native speakers and students with hearing impairment had to use the sign language to practice. As a result, the time for doing a role-play was reduced 5 minutes in order to give more time for the speaking activity during the language input step. In addition, the teacher asked students whether they practiced the online self-study but the majority of students said that they did not do it. In light of these difficulties, the teacher also asked students to do online self-study as homework and submit every week.

3.3.2.3 Listening lesson plan. It was found that the chairs in the classroom were difficult to move, so hearing students were asked to lower their heads or turn their back to the blackboard, depending on their preferences, in order not to see the video during the listening activity. In addition, during the listening task, students mentioned that the conversation was too fast for them to follow and understand the conversation. In light of this difficulty, hearing students were allowed to listen to the audio and students with hearing impairment watched the video twice before doing the post listening task.

3.3.2.4 Reading lesson plan. It was found that the reading task was too long and difficult for students with hearing impairment. In light of these difficulties, the teacher put more highlighted key concepts and vocabulary on the text provided for students with hearing impairment. In addition, during the task, when students asked about the meaning of vocabulary, the teacher typed those vocabulary with meaning in Thai on PowerPoint to support both groups of students.

Finally, the writing, speaking, listening, and reading lesson plans were revised according to the results of the pilot study before being used for model implementation.

3.3.3 Implementing the English instructional management model

The English instructional management model was implemented with one English foundation classroom that consisted of 50 hearing students and four students with hearing impairment at Nakhon Ratchasima Rajabhat University (see Table 3).

Table 3

Sample of Model Implementation

Majors	Hearing students	Students with hearing impairment
Publication Administration	27	
Law	23	
Special Education		4
Total	50	4

The English instruction management model was implemented for 12 lesson plans. Before the implementation, the participants were informed of the objectives of

the study, and made aware that their participation in the study was voluntary and their identity would be kept confidential, and then they indicated their consent by filling in the consent form. The 12 lesson plans were implemented once a week, every Thursday, starting from 10.20 a.m. – 12.50 p.m (150 minutes).

Before the class, the teacher coordinated with the sign language interpreter to prepare for the lesson. The teacher explained each step of the lesson plan, the reading materials, slides, and the class activities in order for the sign interpreter to know how to interpret to students with hearing impairment. The same sign interpreter was assigned to interpret for the whole implementation but there was one week that she needed to attend a conference, so another sign interpreter was assigned to accommodate students with hearing impairment on this week.

Before starting the class activity, one hearing student who got the highest score from the pretest was assigned as the note-taker to take notes and give the notes to students with hearing impairment after the class.

During the class activity, students with hearing impairment sat in the front row of the class next to the window with the support of the sign interpreter to help interpret the lecture and interpret what students with hearing impairment said for the class. When working in cooperative groups, the sign interpreter helped students with hearing impairment to form the group and communicate in case of difficulty.

In this study, the participants were the classroom teacher, the sign interpreter, and students with and without hearing impairment. The roles of participants were described as follows:

3.3.3.1 The roles of the teacher. The roles of the teacher in inclusive English classroom was a facilitator who supported students the whole lesson (Harmer, 2001; J.

Richards & Rodgers, 2001). During the lesson introduction, the teacher activated students' background knowledge to lead questions and answer questions. During the language input, the teacher provided materials and information, and gave explanations about provided materials for students to make sense of the key concepts of the lesson. During the language task, the teacher let students apply what they had learned on the assigned task and observed what students did and how students interacted with each other. Also, the teacher had to form students with and without hearing impairment into cooperative groups and assigned them a role to work on the assigned task. When students performed the assigned task, the teacher gave feedback which could guide students how to improve their learning and encourage students to pay more additional effort.

Also, the teacher explained reasons why materials, activities, and assessment were differentiated between hearing students and students with hearing impairment to help students understand the differences between equality and equity and told them that treating hearing students and students with hearing impairment in the same way was not always fair (Choate, 2004; Salend, 2008).

In addition, the teacher coordinated with a sign interpreter. Before the class, the teacher coordinated with the sign interpreter about the lesson so that he/she could have ideas how to interpret the learning content. During the class, the teacher checked feedback from the sign interpreter whether students with hearing impairment could follow the instruction and understood the lesson or not.

3.3.3.2 The roles of the sign interpreter. The role of a sign interpreter was as a coordinator. The sign interpreter coordinated with the teacher and students with hearing impairment. Before the class, the sign interpreter coordinated with the

teacher to discuss learning content. During the class activity, the sign interpreter interpreted what the teacher was saying to students with hearing impairment. During cooperative groups, the sign interpreter helped place students with hearing impairment in a group of hearing students and helped them communicate. When students with hearing impairment shared ideas with the class, the sign interpreter helped interpret what students with hearing impairment said for the class. During the midterm and final examinations, the sign interpreter coordinated with English program to set date and time for examinations. During the examination, the sign interpreter helped interpreted test directions for students with hearing impairment.

3.3.3.3 *The roles of students with and without hearing impairment.* The roles of students with and without hearing impairment was to behaviorally, affectively, and cognitively engaged in learning during the learning task and learning process. Students had to attend the class on time, prepare for class, pay attention to the lecture, give their contributions, and effort both inside and outside the class. When working in cooperative groups, students had to be a member of a group and work collaboratively on tasks with other group members in order to complete the group goal. Outside the class, students had to do online self-study to practice what had learned.

3.4 Model Evaluation

In this study, the English instructional management model was evaluated by five research instruments: English learning achievement test, social skills questionnaire, learning engagement questionnaire, learning logs, and semi-structured interview.

3.4.1 English achievement test

The English achievement test was a researcher-made test. The pretest and posttest were designed as parallel tests which aimed to investigate the effects of the English instructional management model on students' English learning achievement. The English learning achievement tests were developed based on the communicative testing approach (J. Brown, 2005) which requires students to use all four language skills: speaking, listening, reading, and writing as a function of the language in a meaningful way and useful for them in real life (see Appendix D).

The pretest and posttest were developed according to the course objectives and comprised of four sections to assess each language skill (see Appendix E). The listening test was comprised of 10 items. The reading test was comprised of 10 items. The speaking test was comprised of two speaking tasks. The writing test was comprised of one writing task. Due to communication difficulty, the tests for students with and without hearing impairment were different in three aspects: extra time, listening, and speaking aspects. First, the students with hearing impairment were given 50% extra time to take the test. Second, students with hearing impairment read the audio script while hearing students listen to the audio for the listening section. Third, students with hearing impairment wrote the answers while hearing students listen to the speaking tasks and respond by recording their answers.

To ensure validity, the English achievement test specification and the pretest of hearing students and students with hearing impairment were sent to three experts in the fields of language assessment in order to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received

IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items

Overall, the three experts remarked that the overall evaluation and items evaluation for the English learning achievement test could be used to investigate the improvement of students' English ability in terms of listening, speaking, reading, and writing skills. However, the experts provided comments on speaking rubric. The original version of speaking rubric consisted of three criteria: task, grammar, and vocabulary. Since the speaking test was aimed to see how students responded to the task and developed their fluency and accuracy, the speaking rubric was revised by adding one more criterion "fluency" in order to see whether students have hesitation when they speak, and if this hesitation interferes with communication, according to the experts' comments.

After that, the pretest and posttest were piloted to see the parallel between the two tests and check the reliability of the tests. Kuder-Richardson (K-R20) was used to ensure internal-consistency reliability of the English learning achievement test. Item difficulty (P-value) and Item discrimination (R-value) were also obtained to ensure the test's reliability. Any items did not achieve R-value between the range of 0.20 – 0.80 were revised (Ratchatranon, n.d.).

3.4.1.1 The listening test. The listening test was differentiated by asking hearing students listen to the audio while students with hearing impairment read the audio script and answer the questions. The pilot of listening pretest showed that items 4 and 9 did not achieve R-value between the range of 0.20 – 0.80. For the listening posttest, the results showed that item 2 did not achieve R-value and items 7 and 8 did

not achieve P-value between the range of 0.20 – 0.80. Thus, the four items were adjusted by changing the whole sentences to make the choices more clarified.

Afterward, the listening pretest and posttest were piloted the second time with 31 hearing students who studied an English foundation course. The results of the second pilot showed that both tests achieved P and R-value between the ranges 0.20 – 0.80. In addition, the K-R20 of the listening pretest and posttest were 0.41 and 0.43, respectively which ensured internal-consistency reliability between both tests. Therefore, no further revision was needed. Finally, the final version of the pretest and posttest were presented.

3.4.1.2 The reading test. The pilot of the reading pretest showed that items 18 and 20 did not achieve P and R-value between the range of 0.20 – 0.80. For the reading posttest, the results showed that item 14 did not achieve P-value between the range of 0.20 – 0.80. Thus, the three were adjusted by changing the whole sentence to make the choices more clarified.

Afterward, the reading pretest and posttest were piloted the second time with 31 hearing students who studied an English foundation course. The results of the second pilot showed that both tests achieved P and R-value between the ranges 0.20 – 0.80. In addition, the K-R20 of the listening pretest and posttest were 0.37 and 0.30, respectively which ensured internal-consistency reliability between both tests. Therefore, no further revision was needed. Finally, the final version of the pretest and posttest were presented.

3.4.1.3 The speaking test. The speaking test was differentiated by asking hearing students respond to the prompts and record their answers while students with hearing impairment wrote down the answers of the prompts on the answer sheets.

Hearing students took the test in a computer room. Since the computer room consisted of 40 computers in each room, students were separated into two groups. The first group was 30 students and the second group was 20 students. Before the speaking test, the staff at the computer center showed the students how to use the headphone and a “sound recorder” program and asked hearing students to try to record their sound, save the file using their own name and student ID, and check their files whether everything was alright. After that, hearing students were asked to take the speaking test. Whereas, students with hearing impairment were given a prompt and asked to write the answers.

The pilot of the speaking pretest and posttest showed that only 10 and 14 hearing students, respectively, responded to both two prompts while students with hearing impairment did not write anything to answer the prompts. However, the speaking test was content validated by the three experts that the test could be used to assess students’ speaking ability. Also, the prompts were asked about favorite places in local areas and ways to keep healthy and relax which was related to the course objective (D. Brown, 2004). In addition, the prompts and directions were clear and was doable within the time limit (D. Brown, 2004). Thus, the speaking test was not revised.

However, some students did not respond the prompts, some were off-topic, or some responded in a foreign language, it was unable to assess a score. The speaking rubric was adjusted again by adding a score “0” as “there is not enough information to assess” in order to make accurate assessments (D. Brown, 2004) (see Appendix F). To ensure reliability, the inter-rater and intra-rater were employed. The intra-rater was the researcher herself. The inter-rater was an experienced English language

instructor who has taught English in higher education. The inter-rater was trained by the researcher in order to analyze the tests. Then, the intra-rater and the inter-rater analyzed the data separately and checked together for consistency. The correlation between the two raters for the pretest was 0.940 and the posttest was 0.952.

3.4.1.4 The writing test. The pilot of the writing pretest and posttest showed that only nine and 15 hearing student, respectively, responded to the writing task, whereas students with hearing impairment did not write anything to answer the writing task. However, the writing test was content validated by the three experts that the test could be used to assess students' writing ability. Also, the tasks were asking about memory events when they were a child and in high school which was related to the course objective (D. Brown, 2004). In addition, the prompts and directions were clear and was doable within the time limit (D. Brown, 2004). Thus, the writing test was not revised.

However, some students did not respond the prompts, some were off-topic, or some responded in a foreign language, it was unable to assess a score. The writing rubric was adjusted again by adding a score "0" as "there is not enough information to assess" in order to make accurate assessments (D. Brown, 2004) (see Appendix G). The inter-rater and intra-rater were employed to ensure reliability. It was found that both raters interpret the rating criteria similarly. To ensure reliability, the inter-rater and intra-rater were employed. The intra-rater was the researcher herself. The inter-rater was an experienced English language instructor who has taught English in higher education. The inter-rater was trained by the researcher in order to analyze the tests. Then, the intra-rater and the inter-rater analyzed the data separately and checked

together for consistency. The correlation between the two raters for the pretest was 0.959 and the posttest was 0.941.

To analyze the English achievement test, descriptive statistics including Mean, Min, Max, and Standard Deviation (SD) were applied. Paired sample T-test was applied to compare English learning achievement between the pretest and posttest for hearing students. Since there were only four students with hearing impairment, non-parametric statistics: Wilcoxon was applied to compare their English learning achievement between the pretest and posttest. The speaking and writing rubrics were used to analyze the speaking and writing tests.

3.4.2 Social skills questionnaire

In this study, the social skills questionnaire aimed to investigate the effects of the English instructional management model on students' social skills. The social skills questionnaire was adapted from the 'Understanding your trust actions' which was developed by Johnson (2003). In this study, the social skills questionnaire was developed under five aspects: openness, sharing, acceptance, support, cooperative intentions which consisted 14 items with five-point Likert scale ranged from 'never = 1', 'not very often = 2', 'sometimes = 3', 'very often = 4', and 'always = 5'.

The original version consists of 14 questions with seven Likert scale ranging from 'never' to 'always'. However, the social skills questionnaire in this study was used for the first year of undergraduate students with and without hearing impairment, the rating scales were inverted to five Likert scale, ranging from, 'never', 'not very often', 'sometimes', 'very often', and 'always' in order for students to better interpret and so lead to consistent answers. In addition, Johnson (2003) asserted that there was no right or wrong answers; the important ideas of these questions were for students to

describe their behavior as accurately as possible. Besides, the variance and cross-validation data of invertible method of five-point from seven-point Likert scales are virtually equivalent (Colman, Norris, & Preston, 1997).

The three steps of back translation (Harkness & Schoua-Glusberg, 1998) was employed to ensure the quality of the translation and facilitate students' comprehension. First, the English version of the questionnaire was translated into Thai by the researcher. Then, the Thai version was translated back into English version by another experienced university-level English teacher who taught translation. Finally, the translated English version and the original versions were compared by a native speaker. The native speaker also took note of any differences between the translated English and the original versions which were used by the researcher for revision.

To ensure validity, the social skills questionnaire was sent to four experts in the fields of inclusive education and language assessment in order to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items. The four experts remarked that the overall evaluation and item evaluation for social skills questionnaire could be used to investigate students' social skills in inclusive English classrooms. However, since the questionnaire was translated into Thai with a direct interpretation of English words, the experts provided comments on items 4, 12, and 14 that the translations were not clear and contained ambiguous words. Thus, the three items were adjusted by changing words in order to make the statements more clarified.

After that, the social skills questionnaire was piloted to ensure reliability. The pilot study was conducted with one inclusive English classroom consisting of four students with hearing impairment and 36 hearing students. The results of the pilot study showed that the social skills questionnaire received Cronbach's Alpha at 0.891. Therefore, no further revision was needed. Finally, the Thai version of social skills questionnaire was presented.

To analyze the social skills questionnaire, descriptive statistics including Mean and Standard Deviation (SD) were applied. The Mean scores of social skills were ranged into five levels (Silpcharu, 2005). The Mean scores of were interpreted as follows:

- 4.50 - 5.00 = Participant *always* cooperate with others during the learning task and learning process.
- 3.50 – 4.49 = Participant *very often* cooperate with others during the learning task and learning process.
- 2.50 – 3.49 = Participant *sometimes* cooperate with others during the learning task and learning process.
- 1.50 – 2.49 = Participant *not very often* cooperate during the learning task and learning process.
- 1.00 – 1.49 = Participant *never* cooperate with others during the learning task and learning process.

3.4.3 Learning engagement questionnaire

In this study, the learning engagement questionnaire aimed to investigate the effects of the English instructional management model on students' learning

engagement. The learning engagement questionnaire consisted of three aspects: behavioral engagement, affective engagement, and cognitive engagement.

3.4.3.1 Behavioral engagement. In this study, the behavioral engagement was adapted from Chirasawadi (2008) as the population of this study was undergraduate students in the Thai university context which was similar to the study of Chirasawadi. The behavioral engagement was developed under five aspects: attendance, preparation, attention, asking questions, contributions, and effort which consisted of 11 items with five-point Likert scale ranged from ‘never = 1’, ‘not very often = 2’, ‘sometimes = 3’, ‘very often = 4’, and ‘always = 5’.

3.4.3.2 Affective engagement. In this study, the affective engagement was adapted from Chirasawadi (2008) as the population of this study was undergraduate students in the Thai university context which was similar to the study of Chirasawadi. The affective engagement involved students’ emotions, attitudes, and values toward course content, class activities, and teaching methods which consisted of 10 items with five-point Likerts’ scale ranged from ‘strongly disagree = 1’, ‘disagree = 2’, ‘not sure = 3’, ‘agree = 4’, and ‘strongly agree = 5’.

3.4.3.3 Cognitive engagement. In this study, the cognitive engagement was adapted from Hart, Stewart, and Jimerson (2011) which focused on the cognitive processing that students bring to academic tasks which was similar to this study. The cognitive engagement involved students’ application of cognitive skills based on revised Bloom’s taxonomy in terms of remembering, understanding, applying, analyzing, evaluating, and creating which consisted of 10 items with five-point Likert’s scale ranged from ‘never = 1’, ‘not very often = 2’, ‘sometimes = 3’, ‘very often = 4’, and ‘always = 5’.

However, the questionnaire of Hart et al. (2011) asked students about cognitive engagement in general when studying in school, but this study was aimed to investigate the cognitive engagement in the English classroom only. The items were adjusted to make the statements relevant to the present study and made the questions much clearer for students and suitable for this context. Thus, items 1, 2, 3, 4, 8, and 10 were adjusted by adding the phrase “in this class”. Items 5, 6, 7, and 9 were adjusted by changing the word “school” to “this class”.

To ensure the quality of the translation and to facilitate students' comprehension, the three steps of back translation (Harkness & Schoua-Glusberg, 1998) was employed. First, the English version of the questionnaire was translated into Thai by the researcher. Then, the Thai version was translated back into English version by another experienced university-level English teacher who taught translation. Finally, the translated English version and the original versions were compared by a native speaker. The native speaker also took note of any differences between the translated English and the original versions which were used by the researcher for revision.

To ensure validity, the learning engagement questionnaire was sent to four experts in the fields of inclusive education and language assessment in order to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items. The four experts remarked that the overall evaluation and item evaluation for the learning engagement questionnaire could be used to investigate students' learning engagement in inclusive English classrooms. However, since the questionnaire was

translated into Thai with a direct interpretation of English words, the experts provided comments on item 1 for behavioral engagement and items 1 and 9 for cognitive engagement that the translation were not clear and contained ambiguous words. Thus, the three items were adjusted by changing words to make the statements more clarified.

Afterward, the learning engagement questionnaire was piloted with one inclusive English classroom consisting of four students with hearing impairment and 36 hearing students to ensure reliability. The results showed that the learning engagement questionnaire had high reliability which received Cronbach's Alpha at 0.914. Therefore, no further revision was needed. Finally, the Thai version of learning engagement questionnaire was presented.

To analyze the learning engagement questionnaire, descriptive statistics including Mean and Standard Deviation (SD) were applied. The Mean scores of learning engagement questionnaire were ranged into five levels (Silpcharu, 2005).

For behavioral engagement, the Mean scores of were interpreted as follows:

- 4.50 - 5.00 = Participant ***always*** behaviorally engaged in learning task and learning process.
- 3.50 – 4.49 = Participant ***very often*** behaviorally engaged in learning task and learning process.
- 2.50 – 3.49 = Participant ***sometimes*** behaviorally engaged in learning task and learning process.
- 1.50 – 2.49 = Participant ***not very often*** behaviorally engaged in learning task and learning process.

1.00 – 1.49 = Participant *never* behaviorally engaged in learning task and learning process.

For affective engagement, the Mean scores were interpreted as follows:

4.50 - 5.00 = Participant *strongly agreed* that learning task and learning process engaged them in learning.

3.50 – 4.49 = Participant *agreed* that learning task and learning process engaged them in learning.

2.50 – 3.49 = Participant *were not sure* that learning task and learning process engaged them in learning.

1.50 – 2.49 = Participant *disagreed* that learning task and learning process engaged them in learning.

1.00 – 1.49 = Participant *strongly disagreed* that learning task and learning process engaged them in learning.

For cognitive engagement, the Mean scores of were interpreted as follows:

4.50 - 5.00 = Participant *always* cognitively engaged in learning task and learning process.

3.50 – 4.49 = Participant *very often* cognitively engaged in learning task and learning process.

2.50 – 3.49 = Participant *sometimes* cognitively engaged in learning task and learning process.

1.50 – 2.49 = Participant *not very often* cognitively engaged in learning task and learning process.

1.00 – 1.49 = Participant *never* cognitively engaged in learning task and learning process.

3.4.4 Learning logs

The learning logs were used to investigate the effects of the English instructional management on students' social skills and learning engagement. In this study, the learning logs were consisted of three prompts (see Table 4).

Table 4

Learning Logs

Aspects	Prompts
Learning	1. What have you learned from studying English in this class?
engagement	2. What do you think about the usefulness in studying English?
Social skills	1. What skills do you use when working in groups in this class?

To ensure validity, the learning logs were sent to four experts in the fields of inclusive education and language assessment in order to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items. Overall, the four experts remarked that the prompts of the learning logs could be used to elicit the students' social skills and learning engagement. However, the experts provided comments that the prompt to ask about social skills was not clear. The prompt was adjusted by changing words to make the plot more clarified.

Afterward, the learning logs was piloted with 36 hearing students and four hearing students in order to see whether the students understand the prompts or not. Overall, the responses from the pilot study showed that the three prompts were clear

and could be used for the learning logs. Therefore, no further revision was needed. Finally, the final Thai version of the learning logs were presented.

To analyze the learning logs, data coding and memo writing were employed (Charmaz, 2006). The learning logs were read word-by-word and line-by-line to look for units of meaning that revealed information about social skills and learning engagement in order to initial coding. Then, the initial coding that had the same meaning was sorted into subcategories. Then, each subcategory was integrated into a major category to conceptualize the concept. Afterward, each transcribed data was written memo. Memo writing was aimed to analyze ideas about the data coding. The memo included assumptions that the research discovered by the data coding. To ensure reliability of data coding, an intra-coder was employed. The researcher herself read, coded the data, and used memos to reflect her ideas several times without making an immediate conclusion.

3.4.5 Semi-structured interview

The semi-structured interview was used to investigate the effects of the English instructional management on students' social skills and learning engagement. The semi-structured interview consisted of four guided questions. After asking the guided question to the participants, the researcher asked follow up questions to seek further detail to new ideas on the particular topic (see Table 5).

Table 5

Semi-Structured Interview

Aspects	Questions
Affective engagement	1. What do you think about studying English this semester? 1.1 How is the learning content of this class? 1.2 How is the activities of this class? 1.3 How is the teaching steps of this class?
Behavioral engagement	1. Could you tell me about your behavior when you are in English classroom? Please give examples.
Cognitive engagement	1. What cognitive skills do you develop from this class? Please give examples.
Social skills	1. What do you learn about working in groups from this class? Please give examples.

To ensure validity, the semi-structured interview was sent to experts in the fields of inclusive education and language assessment in order to check for content and construct validity by means of the Index of Item Objective Congruence (IOC). Any items that received IOC under .67 (Ratchatranon, n.d.) were revised and the suggestions from the experts were applied in order to improve the test items. Overall, the four experts remarked that the guided questions could be used for the semi-structured interview to elicit students' social skills and learning engagement.

Afterward, the semi-structured interview was piloted with one hearing student and one student with hearing impairment. The hearing student was one-to-one interaction with the researcher, but for students with hearing impairment, one student

with hearing impairment was asked via the sign interpreter in order to see whether both groups of students understand the guided questions and follow-up questions or not. Overall, the responses from the pilot showed that the guided questions were clear and could be used for the semi-structured interview. Therefore, no further revision was needed. After that, the final Thai version of semi-structured interview was presented.

The semi-structured interview was conducted with four students with hearing impairment and four hearing students. Before the interview, the purpose of the interview was explained to the participants. The participants were asked whether they wanted to participate in the interview and indicated their consent by filling out the consent form. During the interview, the researcher and the participant had one-to-one interaction. For students with hearing impairment, the interview was supported by the sign interpreter. The researcher asked a question to the sign interpreter. Then the sign interpreter used the Thai sign language to communicate with the students with hearing impairment and interpreted the answer to the researcher. The interview took about 30-60 minutes. Audio recording was used to record the entire interview for later transcriptions and data analysis.

To analyze the semi-structured interview, data coding and memo writing were employed (Charmaz, 2006). The transcriptions of semi-structured interview were read word-by-word and line-by-line to look for units of meaning that revealed information about social skills and learning engagement in order to initial coding. Then, the initial coding that had the same meaning was sorted into subcategories. Then, each subcategory was integrated into a major category to conceptualize the concept. Afterward, each transcribed data was written memo. Memo writing was aimed to analyze ideas about the data coding. The memo included assumptions that

the research discovered by the data coding. To ensure reliability of data coding, an intra-coder was employed. The researcher herself read, coded the data, and used memos to reflect her ideas several times without making an immediate conclusion.

3.5 Chapter Summary

The action research was used as the research design which consisted of four phases: situation analysis, model development, model implementation, and model evaluation. The first phase was situation analysis which aimed to investigate learning experiences of undergraduate students with and without hearing impairment in inclusive English classroom in Thailand. After obtaining information in the situation analysis, the framework was conceptualized and instructional procedures were planned to develop the English instruction model. The framework was conceptualized based on the findings of situation analysis, the theoretical framework, and related studies. The instructional procedures were planned which consisted of four teaching steps: lesson introduction, language input, language task and conclusion, and the sequences of activities of listening, speaking, reading, and writing were used to plan the instructional procedures. After developing the model, the goals and objectives were formulated and the course content was organized to develop the English instructional management course in order to implement the English instructional management model. The goals and objectives was formulated based on the Thai Qualification Framework (TQF) for Thailand's Higher Education System and the course content was organized as a topical syllabus around the theme 'The first year's university students' life'. Afterward, the English instructional management model was implemented with one English inclusive classroom consisting of 50 hearing students and four students with hearing impairment for 12 lessons once a

week and each lesson lasted 150 minutes. Finally, the model was evaluated using five research instruments: English achievement test, learning engagement questionnaire, social skills questionnaire, learning logs, and semi-structured interview. Both quantitative and qualitative methods were used to support each other. The English achievement test applied descriptive statistics: Mean, Min, and Max, Standard Deviation (SD). Paired sample T-test was applied to compare English learning achievement for hearing students while Non-parametric statistics: Wilcoxon was applied for students with hearing impairment. The speaking and writing rubrics were employed to analyze the speaking and writing tests. The social skills and learning engagement questionnaire were applied descriptive statistics: Mean and Standard Deviation (SD). Learning logs and semi-structured interview employed data coding and memo writing to analyze the data.

CHAPTER IV

FINDINGS

In this chapter, the research findings were reported in accordance with the two following research questions:

1. What is an English instructional management model based on differentiated instruction and universal design for learning?

2. What are the effects of an English instructional management model based on differentiated instruction and universal design for learning on English learning achievement, social skills, and learning engagement of undergraduate students with and without hearing impairment in inclusive English classrooms?

4.1 The English Instructional Management Model

The English instructional management model was developed based on differentiated instruction and universal design for learning to provide accommodation and adaptation in order for hearing students and students with hearing impairment to fully participate in inclusive English classrooms. When applying differentiated instruction and universal design for learning in designing the English instructional management model, the key concepts of accommodation and adaptation were employed.

In this study, the English instructional management model was called “The DI&UD English instructional management model”. Details of the DI&UD English instructional management model were shown in Figure 7.

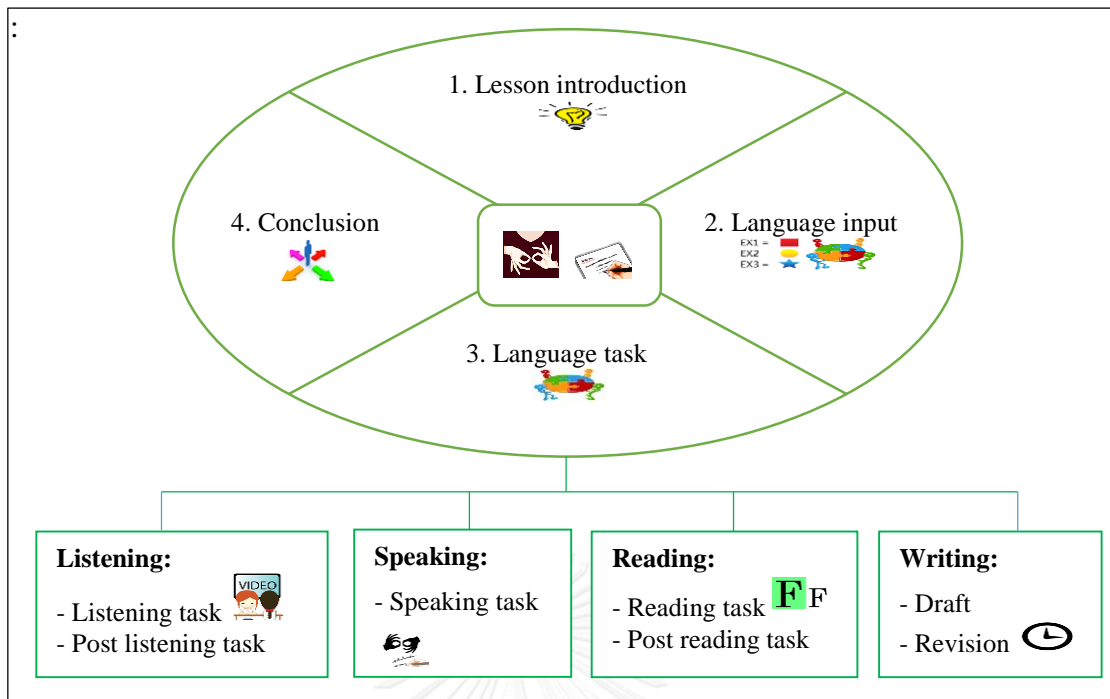












Figure 7 The DI&UD English Instructional Management Model

Note: Symbols are as follows:

- | | | | | | |
|---|------------------------------|---|---|---|---------------|
|  | Sign interpreter |  | Note-taker |  | Extended time |
|  | Multiple examples |  | Large fonts with highlight key information | | |
|  | Support background context |  | Hearing impaired students write in English and use sign language to perform the task | | |
|  | Cooperative groups |  | Hearing impaired students watch a video with captions while hearing students turn their back to the video | | |
|  | Choices of online self-study | | | | |

As Figure 7 shows, the DI&UD English instructional management model described the types of accommodation and adaptation in four teaching steps: lesson introduction, language input, language task, and conclusion. In all four steps, students with hearing impairment were accommodated by the sign language interpreter and the note-taker. In each step, adaptation was provided by differentiating content, process, and product. The details of each step are presented as the following:

4.1.1 Lesson introduction

The first step was lesson introduction. The students were prepared by introducing goals and objectives of the lesson and activating background knowledge. In this step, the content was differentiated by supporting background knowledge. Students watched the video with captions to activate their background knowledge.

4.1.2 Language input

The second step was language input. Students learned six language aspects depending on the language task: grammar, vocabulary, pronunciation, culture, strategy, and generating ideas. In this step, the content was differentiated by providing multiple examples in order for students to flexibly access the learning content and make sense of the key concepts of the lesson. In addition, the product was differentiated by providing opportunities for students to practice with support in cooperative groups.

4.1.3 Language task

The third step was a language task. The students worked on the assigned task according the objective of the lesson to apply key ideas that they had learned in class. In this step, the product was differentiated by providing opportunities for students to practice with support in cooperative groups. One student with hearing impairment was placed in a group of hearing students for listening, reading, and writing tasks but not speaking tasks because of communication difficulty.

4.1.3.1 The listening task. The listening task differentiated the process by adjusting the level of challenge in order to adapt the listening activity to serve individual needs of both groups of students. Hearing students were asked to turn their

back to the blackboard or lower their heads so that they could not see the video while students with hearing impairment watched a video with captions.

4.1.3.2 The reading task. The reading task differentiated the content by highlighting critical features to make the reading materials more accessible for students with hearing impairment. Hearing students read the original version of texts while students with hearing impairment read the texts with large font size and highlighting of key information.

4.1.3.3 The speaking task. The speaking task differentiated the product by providing opportunities for both groups of students to demonstrate role-play based on their strengths. Hearing students used English to perform the role-play while students with hearing impairment wrote a dialogue in English and used Thai sign language to perform the role-play with the support of the sign interpreter to interpret for the whole class.

4.1.3.4 The writing task. The writing task differentiated the product by providing extra time for students with hearing impairment to revise the draft. Hearing students revised the draft and submitted the writing task within the class period while students with hearing impairment were provided extended time to revise their draft and submitted their writing task by noon the next day.

4.1.4 Conclusion

The last step was conclusion. The teacher concluded what had learned in class and provided websites for practicing online self-study after the class. In this step, the process was differentiated by providing choices of content. Several websites of online self-study were provided for students to choose to work on according to their preferences in order to practice what they had learned after the class.

4.2 English Learning Achievement

In this study, the student's English learning achievement in terms of listening, speaking, reading, and writing skills was indicated by the score obtained from the pre- and post-test. Paired sample T-test was applied to compare English learning achievement between the pretest and posttest for hearing students. Non-parametric: Wilcoxon was applied to compare their English learning achievement between the pretest and posttest.

Due to communication difficulty, the listening and speaking tests were differentiated for students with hearing impairment. The listening test was differentiated by offering students with hearing impairment read the audio script while hearing students listened to the audio for the listening section. The speaking test was differentiated by offering students with hearing impairment write the answers while hearing students listened to the speaking tasks and responded by recording their answers.

Overall, the findings showed that the DI&UD English instructional management model significantly improved reading, speaking, and writing skills of hearing students and significantly improved speaking skill of students with hearing impairment. The details of scores of English learning achievement for both groups of students shown in Appendix H.

Table 6

Results of English Achievement Test of Hearing Students

Tests	Pretest (N=50)				Posttest (N=50)				<i>p</i>
	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	
Listening (20)	6.00	2.914	2	14	6.60	2.626	2	12	.172
Reading (20)	5.20	2.740	0	10	6.64	2.371	2	12	.012*
Speaking (20)	3.06	3.316	0	16	4.90	3.813	0	17	.001*
Writing (20)	2.50	4.604	0	17	4.88	5.363	0	16	.000*

Note. * $p < 0.05$.

As shown in Table 6, hearing students significantly improved their reading, speaking, and writing skills at significantly level 0.05. It could be concluded that the DI&UD English instructional management model was effective to improve the reading, speaking, and writing skills for hearing students. However, even though the reading, speaking, and writing skills significantly improved, the mean scores of these three skills were less than 50% of the total. It could be interpreted that hearing students had low level English proficiency.

Table 7

Results of English Achievement Test of Students with Hearing Impairment

Tests	Ranks	N	Mean Rank	Sum of Ranks	p
Listening* (20)	Negative	1	1.50	1.50	0.097
	Positive	3	2.83	8.50	
Reading (20)	Negative	0	0.00	0.00	0.055
	Positive	3	2.00	6.00	
	Tie	1	-	-	
Speaking* (20)	Negative	0	0.00	0.00	0.023*
	Positive	4	2.50	10.00	
Writing (20)	Negative	0	0.00	0.00	0.051
	Positive	3	2.00	6.00	
	Ties	1	-	-	

Note. * $p < 0.05$.

*Listening, students with hearing impairment read the audio script.

*Speaking, students with hearing impairment wrote the dialogue in English and used Thai sign language to perform the role-play.

As shown in Table 7, students with hearing impairment significantly improved their speaking skill at significant level 0.05. It could be interpreted that when students with hearing impairment used sign language to perform what they had learned helped them improve their performance.

4.3 Social Skills

In this study, social skills refer to students' behaviors regarding openness, sharing, acceptance, support, and cooperative intentions.

Overall, the findings showed that the DI&UD English instructional management model was effective to enhance students' social skills in all aspects. In terms of openness, both groups of students were open ideas and shared ideas, and listened to others during the group discussions. In light of sharing, hearing students offered help to members in groups to bring up the performance of the group goal while students with hearing impairment shared materials and sources of information with others. As for acceptance, both groups of students accepted ideas of anyone in groups during the group discussion. In terms of support, hearing students supported students with hearing impairment when they had problems in doing the assigned task. For cooperative intentions, hearing students encouraged members to participate and give their contributions to the group task while students with hearing impairment expressed their willingness to cooperate with others.

Table 8

Results of Social Skills Questionnaire

Items	Hs (N=50)		HIIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Openness				
1. I am open and candid in my dealings with the entire group.	4.02	.742	4.75	.500
2. I keep my thoughts, ideas, feelings and reactions to myself during group discussions.	3.36	.875	3.25	1.708
3. I take risks in expressing new ideas and my current feelings during a group discussions.	3.20	.904	4.25	.500
4. I level with other group members.	3.92	.829	4.75	.500
Sharing				
5. I offer facts, give my opinions and ideas, provide suggestions and relevant information to help the group discussion.	3.46	.885	4.25	.500
6. I offer help and assistance to anyone in the group in order to bring up the performance of everyone.	3.54	.813	3.75	1.258
7. I share any materials, books, sources of information, or other resources I have with the other group members in order to promote the success of all members and the group as a whole.	3.28	.701	4.00	1.414

Results of Social Skills Questionnaire (continued)

Items	Hs (N=50)		HIIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Acceptance				
8. I evaluate the contributions of other group members in terms of whether their contributions are useful to me and whether the other group members are right or wrong.	3.20	.756	4.75	.500
9. I communicate to other group members that I am aware of, and appreciate, their abilities, talents, capabilities, skills, and resources.	3.44	.951	5.00	.000
10. I accept and support the openness of other group members, supporting them for taking risks and encouraging individuality in group members.	3.80	.756	4.50	.577
Support				
11. I give support to group members who are on the spot and struggling to express themselves intellectually or emotionally.	3.58	.883	3.75	1.258
12. I often paraphrase or summarize what other members have said before I respond or comment.	3.24	.716	3.25	.957

Results of Social Skills Questionnaire (continued)

Items	Hs (N=50)		HIIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cooperative intentions				
13. I express my willingness to cooperate with other group members and my expectations that they will also be cooperative.	3.92	.804	5.00	.000
14. I warmly encourage all members to participate, giving them recognition for their contributions, demonstrating acceptance of and openness to their ideas, and generally being friendly and responsive to them.	3.98	.845	4.75	.500

Note. Hs = Hearing students HIIs = Students with hearing impairment

As shown in Table 8, the results illustrated that hearing students were very often open with ideas with others ($M=4.02$) and encouraged others to participate and give contributions to a group task ($M=3.98$). However, hearing students sometimes took risks in expressing new ideas during group discussions ($M=3.20$) and evaluated others' contributions whether they are useful, right, or wrong ($M=3.20$). For students with hearing impairment, they always communicated with other group members that they appreciated their abilities ($M=5.00$) and expressed their willingness to cooperate with other group members ($M=5.00$). However, students with hearing impairment sometimes kept their ideas during group discussions ($M=3.25$) and paraphrased what others said before they responded ($M=3.25$).

4.3.1 Openness

In this study, openness refers to students' willingness to share and discuss ideas, and listen to other students about the information being discussed.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that hearing students were very often open with ideas with others when working in groups. Hearing students indicated that they learned how to work in group, shared ideas, and listened to others' opinions (see Excerpt 1). The data from the semi-structured interview and learning logs also supported the results of the questionnaire that students with hearing impairment were always open with their ideas when working in group. They mentioned that since hearing students did not read the captions during the listening task, they always shared vocabulary that they remembered when watching the video with captions (see Excerpt 2).

Excerpt 1

Hs1: หนูว่าได้ช่วยกันคิดค่ะ ได้รู้จักฟังเพื่อน รับฟังความคิดเห็นเพื่อนค่ะ

I think we helped each other. We listened to others, and shared ideas with each other.

(Hearing student 1, Interview line 149)

Excerpt 2

HI1: ก็มีช่วยคิดค่ะ ก็จะมีตอนดูวิดีโอ ตอนฝึกฟังค่ะ เพราะว่าเพื่อนหูดีไม่เห็น

วิดีโอ แล้วหนูเห็นก็จะบอกคำศัพท์ที่จำได้ให้เพื่อนหูดีฟังค่ะ

I shared ideas with friends. For example, when practicing listening, I watched the video while hearing peers did not. So, I told hearing peers about vocabulary that I remembered.

(Student with hearing impairment 1, Interview line 63-64)

It could be concluded that the DI&UD English instructional management model enhanced students' social skills in terms of openness. Both groups of students usually opened their ideas with other group members. They usually shared and discussed ideas about the assigned task and listened to others' ideas in order to achieve the group task.

4.3.2 Sharing

In this study, sharing refers to students' offering help, materials, and resources to others in order to accomplish a group goal.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that both groups of students very often offered help and shared materials to other group members. Hearing students mentioned that when they got the wrong meaning of vocabulary or did not know how to create a sentence, other group members usually helped each other (see Excerpt. 3). Students with hearing impairment indicated that when working in group, they usually shared their reading materials with hearing peers because their reading materials included highlighted key information which were very helpful to find the answers of the assigned task (see Excerpt 4).

Excerpt 3

H3 ได้ช่วยกันคิดว่าน่าจะทำแบบนี้ละ บางทีแปลคำศัพท์ไม่ถูก หรือเรียงประโยคไม่ถูก เพื่อนก็มาช่วยกันคิดคะว่าควรจะเขียนแบบไหนคะ

We helped each other. Sometimes I translated the vocabulary incorrectly or did not know what to write, other group members helped me to think about how to create the sentence.

(Hearing student 3, Interview line 20-21)

Excerpt 4

HI3: เวลาเข้ากลุ่มกับเพื่อนหูตึงๆ ก็จะแนะนำว่าต้องทำอะไร แปลคำศัพท์ได้ไหม
หนูจะเอาใบงานให้เพื่อนหูตึงดู เพราะว่าของหนูมีตัวหนังสือเข้มๆ ก็บอกว่าอันนี้
น่าจะเป็นคำตอบ ก็จะแลกเปลี่ยนข้อมูลกัน

When working in group, hearing peers usually suggested to me how to do the assigned tasks and asked me if I could translate vocabulary. I also gave my worksheet to hearing peers because my worksheet had the highlight which I thought that it was the answer. We shared information in our group.

(Student with hearing impairment 3, Interview line 92-93)

It could be concluded that the DI&UD English instructional management model enhanced students' social skills in terms of sharing. Hearing usually offered help and assistance to other group members when they needed ideas about the assigned task and students with hearing impairment usually shared their reading materials or other resources with each other in order to bring up the performance of everyone and achieve the group goals.

4.3.3 Acceptance

In this study, acceptance refers to students' accepting others' ideas and contributions about the information being discussed.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that hearing students very often accepted ideas of each other when working in groups. Hearing students said that when they had different ideas, they usually discussed about whose idea was better and voted for the majority (see Excerpt 5). The data from the semi-structured interview supported the results of

the questionnaire that students with hearing impairment always accepted ideas of members in group. Students with hearing impairment indicated that when they had different ideas with hearing peers, they usually discussed ideas and if the ideas of hearing peers were reasonable, they accepted their ideas (see Excerpt 6).

Excerpt 5

H4: มีคิดเห็นไม่ตรงกันบ้างค่ะ เหมือนเพื่อนจะตอบแบบนี้แต่ว่าหนูคิดอีกอย่างหนึ่ง
แต่เพื่อนในกลุ่มเห็นว่าของเพื่อนดีกว่า หนูก็ไม่ขัดค่ะ เสียงส่วนใหญ่ค่ะ
We sometimes had different ideas. For example, friends
wanted to answer this way but I thought it should be another
way. But the majority thought that my friend's idea was better,
I agreed with them.

(Hearing student 5, Interview line 55-56)

Excerpt 6

HI3 มีความคิดเห็นไม่ตรงกันบ้างค่ะ เช่นงานที่อาจารย์ให้เลือกอ่านสถานที่ในโคราช
หนูอยากเลือกกันนี้เพราะว่าง่าย แต่เพื่อนหุติบอกว่ากลุ่มอื่นเขาเลือกแล้ว เลือก
อันอื่นดีกว่า หนูก็เอาตามที่เพื่อนหุติบอค่ะ
Sometimes I had different ideas with hearing peers. For
example, we had to choose the tourist attractions in Korat to
read about. I chose the one that I thought was easy but hearing
peers told me that it was already taken. They asked me to
choose another one and I accepted their ideas.

(Student with hearing impairment 3, Interview line 101-102)

It could be concluded that the DI&UD English instructional management model enhanced students' social skills in terms of acceptance. Both groups of

students accepted ideas of other group members. When they had different ideas, they usually discussed ideas, talked about reasons which one was better and voted for the majority.

4.3.4 Support

In this study, support refers to students' assisting others who have difficulty in managing the information being discussed.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that hearing students very often gave support to other members who faced difficulty in express themselves intellectually or emotionally. Hearing students said that they tried to communicate with hearing impaired peers. When working on the assigned task, they told hearing impaired peers about what they had to do and which one was right or wrong (see Excerpt 7). Students with hearing impairment mentioned that when they did not understand the assigned task, hearing peers usually helped explain what they had to do. Hearing peers usually asked about if they had some problems with homework and could they do the assigned task (see Excerpt 8).

Excerpt 7

H4 ก็พยายามสื่อสารกับเพื่อนหูค้ะ จะเขียนบอกเขาว่าทำแบบนี้้นะ ดูอันนี้เป็นแบบอย่างนะ ประมาณนี้ค้ะ

I tried to communicate with hearing impaired peers. I told them what to do and showed them the examples.

(Hearing student, Interview line 86-87)

Excerpt 8

HI3: เพื่อนหูดีให้ความช่วยเหลือดีค่ะ เวลาไม่เข้าใจก็จะถาม เพื่อนหูดีก็จะช่วยอธิบายว่าต้องทำอะไร บางทีเพื่อนหูดีก็จะถามว่าทำการบ้านเสร็จหรือยัง ทำการบ้านได้ไหม

Hearing peers usually gave support. When I did not understand the assigned task, hearing peers usually helped explain what I had to do. Sometimes hearing peers asked if I finished homework. Could I do homework?

(Student with hearing impairment 3, Interview line 57-58)

It could be concluded that the DI&UD English instructional management model enhanced students' social skills in terms of support. Hearing students usually gave support to students with hearing impairment. When students with hearing impairment had difficulty in doing the assigned task, hearing peers usually helped explain, asked hearing impaired peers whether they could do the assigned task or not, how they could help, or if hearing impaired peers needed any help.

4.3.5 Cooperative intentions

In this study, cooperative intentions refers to students' willingness to cooperate with others to achieve a group goal.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that hearing students very often encouraged group members to participate and give contributions in group tasks. Students with hearing impairment indicated that hearing peers usually assigned the responsibility for them on the assigned task and shared ideas with each other to produce the group task. If the information was not completed, everyone helped each other to find more information

(see Excerpt 9). In addition, the data from the semi-structured interview supported the results of the questionnaire that students with hearing impairment always expressed their willingness to cooperate when working in groups. Hearing students mentioned that students with hearing impairment always asked if they could help do the assigned task. Students with hearing impairment always helped translate vocabulary and asked the sign interpreter to help interpret if hearing students did not understand what they wanted to communicate (see Excerpt 10).

Excerpt 9

HI3: เพื่อนหูดีก็จะแบ่งหัวข้อให้หาคำตอบ หนูก็จะแปลใน Google ทุกคนจะแบ่งหน้าที่กัน แล้วก็เอาข้อมูลที่ทำมารวมกันค่ะ ถ้าอันไหนคำตอบไม่ครบเพื่อนๆ ก็จะช่วยกันหาคำตอบเพิ่มค่ะ

We assigned a role for each member. I used Google to translate. Everyone worked individually and combined information for the group work. If the answer was not complete, we helped each other to find more information.

(Student with hearing impairment 3, Interview line 98-99)

Excerpt 10

H3 เพื่อนหูก็เต็มใจช่วยเต็มที่ค่ะ เขาบอกว่าเขาจะแปลตรงนี้นะ บางทีเวลาหนูไม่เข้าใจที่เขาเขียน เขาก็จะเรียกครูพี่เลี้ยงมาช่วยแปลให้ค่ะ

Hearing impaired peers were willing to help. They said that they would translate this part. When I did not understand what they wrote, they asked the sign interpreter to interpret.

(Hearing student 3, Interview line 92-93)

It could be concluded that the DI&UD English instructional management model enhanced students' social skills in terms of cooperative intentions. Hearing students usually encouraged each other to do the assigned task, shared ideas, and helped each other to complete the group task. Students with hearing impairment always asked other group members how they could help the group task and tried to do as much as they could.

4.4 Learning Engagement

In this study, learning engagement was assessed under three aspects: behavioral engagement, affective engagement, and cognitive engagement.

Overall, the findings showed that the DI&UD English instructional management model engaged students in learning in some aspects. For behavioral engagement, hearing students were behaviorally engaged in learning in terms of attendance, attention, attention, and contribution while students with hearing impairment were behaviorally engaged in learning in terms of attendance, attention, asking questions, contribution, and efforts. In light of affective engagement, both groups of students were affectively engaged in learning in terms of emotions, attitudes, and values. In terms of cognitive engagement, both groups of students were cognitively engaged in learning in terms of understanding and applying.

4.4.1 Behavioral engagement

In this study, behavioral engagement refers to students' active participation in class activities both inside and outside the class in terms of attendance, preparation, attention, asking questions, contributions, and efforts.

Overall, the findings showed that the DI&UD English instructional management model was effective to enhance students' behavioral engagement in

some aspects. Hearing students behaviorally engaged in learning in terms of attendance, attention, and contribution. They attended the class, paid attention to the lecture, and completed homework, and worked actively both inside and outside the class. Students with hearing impairment behaviorally engaged in learning in terms of attendance, attention, asking questions, contribution, and efforts. They attended the class, looked at the sign interpreter to interpret the lecture, asked questions when they did not understand what they had learned in class, completed homework, worked actively during the class activities, and had a conversation with the teachers about the assignment.

Table 9

Results of Behavioral Engagement Questionnaire

Items	Hs (N=50)		HIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Attendance				
1. I came to class on time.	4.12	.824	4.50	1.000
Preparation				
2. I came to class with readings in advance.	2.54	.676	1.75	.500
Attention				
3. I listened carefully in class.	3.62	.567	4.25	.500
4. I took good notes in class.	2.88	.764	3.75	.957
Asking questions				
5. I willingly answered teacher's questions.	3.14	.639	4.50	.577
6. I asked questions when I did not understand.	2.76	.960	4.25	.957

Results of Behavioral Engagement Questionnaire (continued)

Items	Hs (N=50)		HIIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Contribution				
7. I completed my homework on time.	3.76	.716	5.00	.000
8. I worked actively with other students on activities during class.	3.72	.640	4.75	.500
9. I worked actively with classmates outside of class to prepare class assignment.	3.70	.678	1.75	.500
Efforts				
10. I worked harder than I thought I could to meet an instructor's standard or expectation	3.02	.714	4.25	.500
11. I had conversations with the teacher to review assignments or tests that I did not understand.	2.30	.763	4.75	.500

Note. Hs = Hearing students HIIs = Students with hearing impairment

As shown in Table 9, the results illustrated that hearing students very often came to class on time ($M=4.12$), listened carefully in class ($M=3.62$), completed homework on time ($M=3.76$), and worked actively with others both inside and outside the class ($M=3.72$ and $M=3.70$, respectively). However, it was found that hearing students infrequently had conversations with the teacher about assignments or tests that they did not understand ($M=2.30$). For students with hearing impairment, they always came to class on time ($M=4.50$), willingly answered the teacher's questions ($M=4.50$), completed homework on time ($M=5.00$), worked actively with others during the class activities ($M=4.75$), and had conversation with the teacher when they

did not understand about the assignment (M=4.75). However, the findings showed that students with hearing impairment infrequently read before the class (M=1.75) and infrequently worked actively with others outside the class (M=1.75).

4.4.1.1 Attendance. In this study, attendance refers to students' coming to class on time.

The data from the semi-structured interview supported the results of questionnaire that hearing students very often came to the class on time. Hearing students mentioned that they usually came to class on time but were late for two or three times (see Excerpt 11). The data from the semi-structured interview also supported that students with hearing impairment always came to class on time. They mentioned that they always on time for class because they were afraid that they could not follow the lesson (see Excerpt 12).

Excerpt 11

H4: ส่วนใหญ่ก็จะเข้าเรียนตรงต่อเวลาค่ะ มีเข้าสายประมาณ 2-3 ครั้งค่ะ
I usually attended the class on time. There were only two-three times that I was late for class.

(Hearing student 4, Interview line 125-126)

Excerpt 12

HI4: เข้าเรียนตรงต่อเวลาทุกครั้งค่ะ เพราะกลัวเรียนไม่ทันเพื่อน
I always came to class on time because I was afraid that I could not follow the lesson.

(Student with hearing impairment 4, Interview line 72)

It could be concluded that the DI&UD English instructional management model enhanced student behavioral engagement in terms of attendance. Both groups of students usually attended the class and was on time to attend the class.

4.4.1.2 Preparation. In this study, preparation refers to students' pre-class reading of the learning materials and reviewing what they had learned in prior classes.

The data from the semi-structured interview supported the results of the questionnaire that hearing students sometimes prepared themselves before the class. Hearing students mentioned that they did not read before the class. However, they mentioned that they reviewed the lesson by roughly reading the worksheet that they studied the prior week and worked on online self-study (see Excerpt 13). The data from the semi-structured interview also supported the results of the questionnaire that students with hearing impairment infrequently prepared themselves before the class. They indicated that they did not read before the class because even they read, they did not understand what they read (see Excerpt 14).

Excerpt 13

H1: ไม่ได้อ่านค่ะ แต่ว่าเอาใบงานที่เรียนในห้องมาดูผ่านๆค่ะ เพราะว่าก็จะทำ
online self-study อยู่แล้วค่ะ

No, I did not read before class. But I roughly read the worksheets that we studied during the class activities and I usually worked on online self-study.

(Hearing student 1, Interview line 128)

Excerpt 14

HI3: ไม่ได้อ่านค่ะ ถึงอ่านหนังสือก็ไม่เข้าใจค่ะ

No, I did not read before the class. Even though I read, I did not understand.

(Student with hearing impairment 3, Interview line 116)

It could be concluded that the DI&UD English instructional management model did not enhance student behavioral engagement in terms of preparation. Both groups of students did not read before the class but they sometimes reviewed what they had learned by roughly reading the worksheet.

4.4.1.3 Attention. Attention refers to students' listening to the lecture and looking at the sign interpreter during the class activities.

The data from the semi-structured interview supported the results of the questionnaire that hearing students very often listened carefully to the lecture when they were in class. Hearing students mentioned that when they were in class, they usually listened to the lecture, but sometimes talked to friends or used social media (see Excerpt 15). The data from the semi-structured interview supported the results of the questionnaire that students with hearing impairment very often listened carefully to the lecture. They mentioned that when the teacher gave the lecture, they usually looked at the sign interpreter to interpret what the teacher talked about. They said they could not look at the teacher because if they looked at the teacher, they could not understand what the teacher said (see Excerpt 16).

Excerpt 15

H1: ก็ตั้งใจฟังค่ะ จะมีบ้างครั้งก็คุยกับเพื่อนบ้างเป็นบางครั้งค่ะ บางครั้งก็แอบ
เล่นโทรศัพท์บ้างค่ะ

I usually listened to the lecture. Sometimes, I talked to friends,
sometimes I used mobile phone for social media.

(Hearing impairment 1, Interview line 92)

Excerpt 16

HI3 จะดูครูถามค่ะ เพราะตอนอาจารย์พูดหนูไม่เข้าใจค่ะ ต้องดูครูถาม
แปลถึงจะเข้าใจค่ะ

When the teacher gave the lectures, I looked at the sign
Interpreter. If I looked at the teacher, I did not understand what
the teacher talked about.

(Student with hearing impairment 3, Interview line 86-87)

It could be concluded that the DI&UD English instructional management model enhanced student behavioral engagement in terms of attention. Hearing students actively listened to the lecture while students with hearing impairment looked at the sign interpreter to interpret what the teacher said.

4.4.1.4 Asking questions. In this study, asking questions refers to students' asking questions of the teacher when they did not understand the information being discussed during class activities.

The data from the semi-structured interview supported the results of the questionnaire that hearing students sometimes asked questions when they did not understand what had learned in class. Hearing students mentioned that when they did not understand the lesson, they usually asked for help from friends (see Excerpt 17).

However, one hearing student mentioned that sometimes she wanted to ask more questions but she was concerned of friends' opinions, so she did not ask too many questions in class (see Excerpt 18). However, the data from the semi-structured interview supported the results of the questionnaire that students with hearing impairment very often asked questions when they did not understand what they had learned in class. Students with hearing impairment indicated that when they did not understand the lesson, they usually directly asked the sign interpreter or asked the sign interpreter to help ask the teacher for them (see Excerpt 19).

Excerpt 17

H1

ส่วนใหญ่วเวลาไม่เข้าใจ จะถามเพื่อนมากกว่าค่ะ

When I did not understand, I usually asked friends.

(Hearing student 1, Interview line 59)

Excerpt 18

H4:

ถ้าไม่เข้าใจก็จะยกมือถามค่ะ ที่จริงหนูอยากถามหลายครั้งแต่เกรงใจเพื่อนค่ะ

When I did not understand, I usually ask questions. But, sometimes I wanted to ask more questions, but I felt concerned of friends.

(Hearing student 4: Interview line 108-109)

Excerpt 19

H11:

จะถามครูล่าม แล้วให้ครูล่ามถามอาจารย์อีกครั้งค่ะ

I asked the sign interpreter, then the sign interpreter ask the teacher later.

(Student with hearing impairment 1, Interview line 98-99)

It could be concluded that the DI&UD English instructional management model enhanced behavioral engagement in terms of asking questions of students with hearing impairment but not hearing students. When students did not understand what they had learned in class, hearing students usually asked friends while students with hearing impairment usually asked the sign interpreter to ask the questions to the teacher.

4.4.1.5 Contribution. In this study, contribution refers to students' working on the assigned tasks during the class activities and outside the class.

The data from that the semi-structured interview supported the results of the questionnaire that hearing students very often completed homework on time and worked actively with peers both inside and outside the class. Hearing students mentioned they tried to work on the assigned task during the class activity. After the class, they usually did online self-study with friends or sometimes work at home but if they did not understand, they used Facebook to ask and shared ideas with friends (see Excerpt 20).

Excerpt 20

H3: เวลาอาจารย์ให้ทำงานในห้อง ก็พยายามทำเต็มที่ค่ะ การบ้าน online self-study ส่วนใหญ่ก็ทำกับเพื่อนๆ บางครั้งก็ทำคนเดียวที่บ้านค่ะ ถ้าไม่เข้าใจก็ถามเพื่อนทาง Facebook ค่ะ

I tried to work on the assigned task during the class activity.

For online self-study, I usually worked with friends but I

sometimes worked at home, but if I did not understand I asked friends on Facebook.

(Hearing student 2, Interview line 98)

For students with hearing impairment, the data from the semi-structured interview supported the results of questionnaire that they always completed homework on time and worked actively with others during class activities. Students with hearing impairment mentioned that during the class activity, they always worked on the assigned task and asked for comments from hearing peers whether what they did right or wrong and revised (see Excerpt 21). However, the data from the semi-structured interview disagreed with the results of the questionnaire that students with hearing impairment infrequently worked actively with classmates outside the class. Students with hearing impairment indicated that they usually asked their hearing impaired peers about the assigned task. In addition, when they did not understand the homework instructions, they usually sent a message via Facebook to ask hearing peers for suggestion (see Excerpt 22).

Excerpt 21

HI3: เวลาทำงานในห้องก็จะแบ่งกันทำค่ะ พอทำเสร็จก็จะเอาให้เพื่อนหุติดู เพื่อนก็จะเช็คอีกทีแล้วก็แก้ตามที่เพื่อนแนะนำค่ะ

During the class activity, we usually assigned the role for each member. After I finished my part, I asked comments from hearing peers and revised according to their comments.

(Student with hearing impairment 3, Interview line 104-105)

Excerpt 22

HI2 ทำการบ้านคนเดียวค่ะ พอทำเสร็จก็จะปรึกษาเพื่อนหูที่เรียนด้วยกันว่าทำถูกไหม บางทีก็ถามเพื่อนหูดีทาง FB ค่ะ

I worked individually. But I usually asked hearing-impaired peers if what I did correctly or not. Sometimes I asked hearing peers through Facebook.

(Student with hearing impairment 2, Interview lines 19-20)

It could be concluded that the DI&UD English instructional management model enhanced student behavioral engagement in terms of contributions. Both groups of students completed homework and submitted on time. In addition, during the class activity, they actively worked on the task with other students.

4.4.1.6 Efforts. In this study, efforts refer to students' searching for more information and having conversations with the teacher about the assignments after the class.

The data from the semi-structured interview supported the results of the questionnaire that hearing students infrequently had conversations with the teacher about the assignment if they did not understand. Hearing students mentioned that when they did not understand the assignment, they usually used social media to search for more information or asked their peers, but if they were unable to answer their questions, they asked the teacher later (see Excerpt 23).

Excerpt 23

H1: ถ้าไม่เข้าใจ ก็จะหาจาก Internet บ้าง ใช้ Google แปลว่าคำนี้แปลว่าอะไร
ถามเพื่อนบ้าง ถ้าถามเพื่อนแล้วไม่เข้าใจถึงถามอาจารย์ค่ะ

When I did not understand what I had learned, I searched the Internet, used Google to translate, or asked friends. If I did not get any ideas, I asked the teacher later.

(Hearing student 1, Interview line 64)

For students with hearing impairment, the data from the semi-structured interview supported the results of the questionnaire that they always had conversation with the teacher. Students with hearing impairment said that they always talked to the teacher about the online self-study and asked the teacher to explain how to do the assigned task after the class (see Excerpt 24).

Excerpt 24

HI4 หลังเลิกเรียน ก็จะถามเกี่ยวกับการบ้านค่ะ ให้ครูแนะนำว่าต้องทำการอย่างไร

After the class, I asked the teacher about the homework. I asked the teacher to explain how to do the online self-study.

(Student with hearing impairment 4, Interview line 78)

It could be concluded that the DI&UD English instructional management model enhanced student behavioral engagement in terms of efforts of students with hearing impairment but not hearing students. When students did not understand what they had learned for the assignment, students with hearing impairment usually had a conversation with the teacher but hearing students usually asked friends or used social media to search for more information.

4.4.2 Affective engagement

In this study, affective engagement refers to students' emotions, attitudes, and values towards course content, class activities, and teaching steps.

Overall, the findings showed that the DI&UD English instructional management model was effective to enhance students' affective engagement in all aspects. In terms of emotions, both groups of students enjoyed the work they did in class. In light of attitudes, both groups of students mentioned that the class activities and teaching steps helped them understand the lesson better. In the area of values, both groups of students indicated that the theories and concepts from this class were useful for them in real life, further study, and for their career in the future.

Table 10

Results of Affective Engagement Questionnaire

Items	Hs (N=50)		HIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Emotions				
1. I feel happy in this course.	3.38	.725	5.00	.000
2. I feel confused in this course.	3.14	.808	1.75	.500
3. I enjoy the work I do in class.	3.64	.827	5.00	.000

Results of Affective Engagement Questionnaire (continued)

Items	Hs (N=50)		HIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Attitudes				
4. The activities in the class are interesting.	3.50	.863	4.75	.500
5. The activities in the class help me understand the lesson better.	3.94	.793	4.25	.957
6. The teaching steps in this class help me understand the lesson better.	3.94	.818	5.00	.000
7. I developed enthusiasm and interest to learn more about course content.	3.54	.646	4.00	1.155
8. Studying in this class helps improve my overall English language skills.	3.52	.646	3.75	.500
Values				
9. I think I can apply theories and concepts from this class to practical problems.	3.50	.580	3.50	1.000
10. I think theories and concepts from this class will be valuable for my career in the future	4.16	.710	4.75	.500

Note. Hs = Hearing students HIs = Students with hearing impairment

As shown in Table 10, the results illustrated that hearing students agreed that they enjoyed the work they did in class ($M=3.64$), the activities in class and the teaching steps helped them understand the lesson better ($M=3.94$ and $M=3.94$, respectively), the theories and concepts from this class were valuable for their career in the future ($M=4.16$). However, hearing students indicated that they were not sure if they were confused when studying in this course ($M=3.14$). For students with hearing

impairment, it was found that they strongly agreed that they felt happy (M=5.00) and enjoyed the work they did in class (M=5.00), they strongly agreed that the class activities were interesting and the teaching steps helped them understand the lesson better (M=4.75 and M=5.00, respectively), and the theories and concepts from this class were valuable for them (M=4.75). However, the results showed that students with hearing impairment disagreed that they were confused when studying in this course (M=1.75).

4.4.2.1 Emotions. In this study, emotions refer to students' feeling happiness, enjoyment, or confusion when doing the class activities.

The data from the semi-structured interview supported the results of the questionnaire that hearing students agreed that they enjoyed the work they did in class. Hearing students said that they enjoyed the class activities because this class included a lot of activities which helped them practice many skills (see Excerpt 25).

Excerpt 25

H2

ก็ดีค่ะ มีกิจกรรมหลากหลาย ทำให้เราได้ฝึกหลายทักษะ

It's good. It included lots of activities which helped me practice many language skills.

(Hearing student 2, Interview line 28)

However, even though both groups of students enjoyed doing the class activities, the findings showed that both groups of students felt confused about what they had learned in class. One hearing student indicated that she understood what she has learned but when she did homework, she tended to be confused and did not understand how to apply what had learned in class (see Excerpt 26). Students with hearing impairment mentioned that this course was very difficult for them. They were

confused when studying in class and the video was too fast for them to read the captions (see Excerpt 27).

Excerpt 26

H4: บางทีหนูฟังแล้วไม่เข้าใจ บางทีก็คิดว่า ตกลงเอาไปใช้ยังไง บางทีตอนเรียนเข้าใจ แต่พอเอามาใช้จริงๆ มันรวมกันหมดเลย ใช้ไม่ถูกเลยคะ ตัวอย่างเช่น บางทีหนูเห็น **grammar** หนูก็เข้าใจแล้วนะว่าใช้แบบนี้ละ แต่พอเวลานานๆ ไป เริ่มมีการเปลี่ยนรูป เปลี่ยนโน่นนี่ หนูก็เริ่มงงแล้วคะ

Sometimes I did not understand what I had learned. Sometimes I understood what I had learned, but when I would like to use it I did not know how to apply. For example, when I studied grammar, I thought I understood how to use it. But, when the structure has changed, I was confused.

(Hearing student 4, Interview line 110-112)

Excerpt 27

HI3: ยากมากคะ เข้าใจนิดหน่อย เวลาเรียนรู้สึกสับสน วิดีโอก็เร็วอ่านไม่ทันคะ

It's very difficult. I understood a bit. I was confused. The video was too fast so that I could not follow.

(Student with hearing impairment 3, Interview line 7-8)

It could be concluded that the DI&UD English instructional management model enhanced student affective engagement in terms of emotions. Both groups of students enjoyed the class activities but they sometimes felt confused what they had learned.

4.4.2.2 Attitudes. In this study, attitudes refer to class activities that were interesting and helped students comprehend the lessons, materials that were easy to understand, and the teaching steps that were in order and clear.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that both groups of students agreed that the class activities helped them understand the lesson better. Hearing students mentioned that the video helped them see the interaction and practice listening at the same time. They also said that the video included examples which helped them grasp ideas about the lesson (see Excerpt 28). Hearing students also indicated that the reading materials of this course consisted of examples that were easy to read and understand compared to the textbook (see Excerpt 29). Students with hearing impairment mentioned that the class activity such as the role-play helped them learn how to use the sign language and gestures to communicate with others which helped them understand the lesson better (see Excerpt 30).

Excerpt 28

H3

หนูชอบดูวิดีโอค่ะ ได้เห็นเขาคูยกัน ได้ฟังสำเนียงเขาด้วยค่ะ และมันก็มีตัวอย่างที่อาจารย์เอามาให้เรียนค่ะ

I liked watching the video. I could see the conversation between people and practice listening. It also included examples that the teacher taught during the lesson.

(Hearing student 3, Interview line 67-68)

Excerpt 29

H3: มันก็ครอบคลุมทั้งหมดที่เขาจัดมาให้เรียนนะคะ แต่ว่าเข้าใจง่ายกว่าค่ะ
 เพราะว่าอาจารย์มีตัวอย่างให้ดู เพราะอ่านในหนังสือแล้วหนูว่าเข้าใจยาก
 I think this course covered all course adjectives. I think, the learning materials seemed to be easy to understand because there were examples provided. To me, reading from the text book was difficult to understand.”

(Hearing student 3, Interview line 46-47)

Excerpt 30

HI3: กิจกรรมน่าสนใจค่ะ กิจกรรมที่ชอบคือออกไปแสดงหน้าห้อง เพราะว่าได้พูดคุยสื่อสาร ได้ใช้ท่าทาง เพราะถ้าเรียนเขียน ดูกระดานอย่างเดียวจะไม่ค่อยเข้าใจ แต่ถ้าได้ออกไปแสดงทำให้เข้าใจบทเรียนมากขึ้นค่ะ
The activities were interesting. I liked doing the role-play because I could use body language and sign language for communication which helped me understand the lesson better than writing and looking at the blackboard.

(Student with hearing impairment 3, Interview line 45-48)

In addition, the data from the semi-structured interview supported the results of the questionnaire that hearing students agreed that the teaching steps in this class were in ordered in a manner which helped them understand the lesson better. They said that before starting the class, the course objective was presented which guided them about what they had to study. Before ending the class, the teacher concluded the main points which helped them review what had learned in class (see Excerpt 31).

Excerpt 31

H2: เนื้อหาที่เรียนก็ยากขึ้นกว่าตอนมัธยมค่ะ แต่เรียนอันนี้มันจะเป็นขั้นตอนที่ต้องทำอะไรบ้าง ตอนเริ่มเรียนอาจารย์ก็จะบอกว่าจะสอนอะไร แล้วอาจารย์ก็ทำตามทีบอก ตอนท้ายชั่วโมงอาจารย์ก็เน้นย้ำอีกทีก็ทำให้จำได้ เพราะว่าบางครั้งเรียนไปแล้วก็ลืมค่ะ

The content is more difficult than studying in high school. But, I think the teaching step was in an order. Before starting the lesson, the teacher told what we had to study and the teacher followed the objectives. Before ending the class, the teacher concluded what had learned which helped me review and remember the lesson.

(Hearing student 2, Interview line 71-73)

It could be concluded that the DI&UD English instructional management model enhanced student affective engagement in terms of attitudes. Both groups of students agreed that the class activities were interesting and included many examples which helped them understand the lesson better. Also, the teaching steps were in an order which helped students understand the lesson better.

4.4.2.3 Values. In this study, values refer to students' use of what they had learned in class for daily life, for communicating and doing business with other people from different countries, and further studies.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that hearing students and students with hearing impairment agreed that this course was valuable for them in daily life and for their career in the future. Hearing students indicated that English was very important because it was used as the language to communicate and do business with other people around the world (see Excerpt 32). One student with hearing impairment

stated that since she was from other province, this course content helped her get to know Korat more. She also mentioned that she learned how to write a daily schedule, how to relax and keep healthy if she got health problems (see Excerpt 33).

Excerpt 32

English is the language that used around the world. So, learning English is very useful for communicating with people from other countries and doing businesses in many areas such as tour guide, marketing, hotel, and others

(Hearing student, Learning logs)

Excerpt 33

HI3: มีประโยชน์ค่ะ เช่นสถานที่ท่องเที่ยวต่างๆ ในโคราช เพราะมาจากชัยภูมิก็ได้รู้สถานที่ท่องเที่ยวในโคราช และก็มีการเขียนแผนการเรียน ก็ได้ฝึกว่าแต่ละวันมีอะไรต้องทำบ้าง และก็วิธีการดูแลรักษาสุขภาพ เช่นถ้าเครียดควรทำอย่างไรให้ผ่อนคลาย หรือถ้าปวดท้องต้องทำอย่างไร

This course was very useful. For example, tourist attractions in Korat. I'm from Chaiyaphum, so I learned and got to know tourist attractions in Korat. About the study plan, I learned to manage about what I had to do every day. About remedy, I learned how to reduce stress or what to do when I got stomachache

(Student with hearing impairment 3, Interview line 42-44)

It could be concluded that the DI&UD English instructional management model enhanced student affective engagement in terms of values. Both groups of

students agreed that this course was useful for their daily life, their further study, and their career in the future.

4.4.3 Cognitive engagement

In this study, cognitive engagement refers to students' cognitive process in terms of remembering, understanding, applying, analyzing, evaluating, and creating.

Overall, the findings showed that the DI&UD English instructional management model was effective to enhance students' cognitive engagement in terms of understanding and applying. In terms of understanding, both groups of students understood what they had learned in class by figuring out how the information was useful in the real world. In light of applying, hearing students applied what they had learned by connecting classroom concepts with their own experience while students with hearing impairment related with things that fitted together.

Table 11

Results of Cognitive Engagement Questionnaire

Items	Hs (N=50)		HIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Remembering				
1. I recall what I learned in this class in the past two weeks.	3.22	.764	5.00	.000
Understanding				
2. When I study in this class, I figure out how the information might be useful in the real world.	3.56	.861	5.00	.000
3. When I learn new information in this class, I try to put the ideas in my own words.	3.10	.789	3.25	1.500

Results of Cognitive Engagement Questionnaire (continued)

Items	Hs (N=50)		HIIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Applying				
4. When I study in this class, I try to connect what I am learning with my own experiences.	3.30	.735	4.75	.500
5. I try to understand how the things I learn in this class fit together with each other.	3.20	.833	3.75	.500
Analyzing				
6. I try to see the similarities and differences between things I am learning for this class and things I already knows.	3.26	.723	4.50	.577
7. When learning things for this class, I try to associate them with what I learned in other class about the same or similar things.	3.06	.767	4.50	.577
Evaluating				
8. When I study in this class, I try to think through topics and decide what I'm supposed to learn from them, rather than studying topics by just reading them over.	3.20	.926	4.50	.577

Results of Cognitive Engagement Questionnaire (continued)

Items	Hs (N=50)		HIs (N=4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Creating				
9. I make up my own examples to help me understand the important concepts I learn from this class.	2.92	.829	3.75	1.500
10. When studying in this class, I try to combine different pieces of information from course material in new ways.	2.90	.863	4.25	.500

Note. Hs = Hearing students HIs = Students with hearing impairment

As shown in Table 11, the results illustrated that hearing students very often understood what they had learned in class by figuring out how the information might be useful in the real world ($M=3.56$). It was found that hearing students sometimes applied what they had learned in class by connecting what they are learning and their own experiences ($M=3.30$) and analyzed information by seeing the similarities and differences between what had learned and what they already know ($M=3.26$). For students with hearing impairment, it was found that they always remembered what they had learned in the past two weeks ($M=5.00$), figured out how the information they had learned was useful in the real world ($M=5.00$), and connected what they are learning with their own experiences ($M=4.75$). However, it was found that a group of student with hearing impairment sometimes put their ideas in their own words when learning new information ($M=3.25$).

4.4.3.1 Remembering. In this study, remembering refers to the ability to recall information learned during prior classes.

The data from the semi-structured interview supported the results of the questionnaire that hearing students sometimes remembered what they had learned in the past two weeks. Hearing students mentioned that since they did not review after the class, they forgot what they had learned in class (see Excerpt 34). However, the data from the semi-structured interview did not support the results of the questionnaire that students with hearing impairment always remembered what they had learned in class. One student with hearing impairment mentioned that she learned new vocabulary from this class but she could not remember (see Excerpt 35).

Excerpt 34

H1: จำไม่ได้เลยค่ะ เหมือนหนูไม่ได้ทบทวนด้วยค่ะ

I could not remember. I did not review what I had learned in class.

(Hearing student 1, Interview line 137)

Excerpt 35

H1I ได้เรียนรู้คำศัพท์เพิ่มเยอะค่ะ แต่ว่าจำไม่ได้ค่ะ

I learned many new vocabulary but I could not remember.

(Student with hearing impairment, Interview line 108)

It could be concluded that the DI&UD English instructional management model did not enhanced student cognitive engagement in terms of remembering. Both groups of students did not remember what they had learned in class because they did not review what had learned and did not read in advance before the class.

4.4.3.2 Understanding. In this study, understanding refers to the ability to explain ideas and information that had been learned in class.

The data from the semi-structured interview and learning logs supported the results of the questionnaire that both groups of students understood what they had learned in class by figuring out how the information was useful in the real world. One student with hearing impairment mentioned that when she worked on the assigned task, she always imagined if she was in the real situations which helped her understand the lesson better, for example, what would she do if she got sick or where would she want to go for vacation (see Excerpt 36).

Excerpt 36

HI3: คิดแบบจินตนาการให้เหมือนสถานการณ์จริงค่ะ เช่นถ้าเพื่อนไม่สบาย ควรจะให้คำแนะนำอย่างไรและที่แนะนำจะถูกต้องไหมก็จะถามครูถามอีกทีค่ะ หรือที่ถามเกี่ยวกับสถานที่ท่องเที่ยวที่ชอบ ก็จะจินตนาการไปถึงทะเล โรงหนัง เดอะมอลล์ ว่าชอบที่ไหน ทำไมถึงอยากไปเที่ยวค่ะ

I would imagine as if it's a real situation. For example, if my friend is sick, what should I give him for advice, then I asked the sign interpreter later if my advice is right or wrong. About the favorite tourist attractions, I would imagine to sea, cinema, and the mall about where I liked and why I wanted to go there.

(Student with hearing impairment 3, Interview line 52-54)

It could be concluded that the DI&UD English instructional management model enhanced student cognitive engagement in terms of understanding. When learning new information, both groups of students understood what had learned in class by figuring out how the information was useful in the real world.

4.4.3.3 Applying. In this study, applying refers to the ability to use what had been learned in class in similar situations or relate to their prior experience.

The data from the semi-structured interview supported the results of the questionnaire that hearing students sometimes applied what they had learned in class by connecting with their own experiences. Hearing students mentioned that they usually connected vocabulary or grammar they had learned in class with what they studied in high school or with their part time job. One hearing student said that since she used to do a part-time job at the hospital, she had learned some vocabulary about health problems. The lesson about health problems was easy for her (see Excerpt 37). However, the data from the semi-structured interview supported the results of the questionnaire that students with hearing impairment very often applied what they had learned by relating to each other. Student with hearing impairment mentioned that when they did not know the vocabulary, they always drew the pictures to relate to that vocabulary (see Excerpt 38).

Excerpt 37

H4: บางเรื่องก็ยากบางเรื่องก็คิดว่าง่ายค่ะ อย่างเรียนเกี่ยวกับปัญหาสุขภาพก็สบายๆ หน่อยเพราะว่าเป็นเรื่องที่เคยผ่านมาแล้ว เพราะหนูเคยทำงานที่โรงพยาบาลมาก่อน ก็จะมีพอรู้อำคำศัพท์บ้างค่ะ

Some lessons were difficult but some were easy for me. For example, the lesson about health problems were easy for me because I used to work for the hospital. So I have known some vocabulary about health problems.

(Hearing student 4, Interview line 135-136)

Excerpt 38

HI2: ก็วาดรูปภาพเพื่อเชื่อมโยงกับคำศัพท์ต่างๆ กับรูปภาพครับ
 เช่นตอนสอบเขียนที่ถามว่าชอบสถานที่ไหนในมหาวิทยาลัย ผมไม่รู้จะเขียน
 อะไรก็เลยวาดรูปอาคาร 9 คณะที่ผมเรียนครับ

I drew pictures to relate to vocabulary. For example, the writing test, the question asked to write the favorite place at the university. I did not know what to write, so I drew Building 9 where my faculty was located.

(Student with hearing impairment 2, Interview line 114-116)

It could be concluded that the DI&UD English instructional management model enhanced student cognitive engagement in terms of applying. Hearing students applied what they had learned in class by connecting with their own experiences while students with hearing impairment applied what they had learned by relating to each other.

4.4.3.4 Analyzing. In this study, analyzing refers to the ability to compare and associate the similarities and differences between what had been learned in class and prior knowledge.

The data from the semi-structured interview supported the results of the questionnaire that hearing students sometimes compared the similarities and differences between what they learned in class and what they already knew. One hearing student mentioned that when she compared vocabulary she learned in this class with what she learned in high school, she found that the vocabulary was spelt differently but the meaning was the same (see Excerpt 39).

Excerpt 39

H4: มีบางคำเป็นคำศัพท์ที่สะกดไม่เหมือนกันกับตอนเรียนมัธยม แต่แปลแล้ว
ความหมายเหมือนกันค่ะ

Some words seemed to spell differently from what I studied in high school but the meaning is the same.

(Hearing student 4, Interview line 32)

It could be concluded that the DI&UD English instructional management model did not enhance student cognitive engagement in terms of analyzing. When learning new information, both groups of students did not compare the similarities and differences or associate what they had learned and things they already know.

4.4.3.5 Evaluating. In this study, evaluating refers to the ability to generate ideas or ways of viewing things based on what had been learned in class.

The data from the semi-structured interview supported the results of the questionnaire that hearing students sometimes evaluated what they had learned in class. Hearing students mentioned that when they got the feedback from the teacher, they did not read it, or sometimes they read it but they did not revise their work. However, the semi-structured interview disagreed with the results of the questionnaire that students with hearing impairment always evaluated what they had learned. Students with hearing impairment indicated that they read the feedback from the teacher but they did not revise it (see Excerpt 40).

Excerpt 40

HI2: ได้อ่านงานที่อาจารย์แนะนำอยู่ครับ แต่ไม่ได้แก้ไขครับ

I read the feedback from the teacher but I did not revise it.

(Student with hearing impairment 2, Interview line 120)

It could be concluded that the DI&UD English instructional management model did not enhance student cognitive engagement in terms of evaluating. Both groups of students did not generate ideas on what they had learned in class. Students tended not to read feedback or revise feedback when they got from the teacher in order to generate ideas to help them understand what had been learned better.

4.5 Chapter Summary

The research findings were reported in accordance with the two research questions: the English instructional management model and the effects of the English instructional management model on English learning achievement, social skills, and learning engagement.

The English instructional management model was developed based on differentiated instruction and universal design for learning to provide accommodation and adaptation for hearing students and students with hearing impairment to fully participate in inclusive English classrooms. The English instructional management model was called “The DI&UD English instructional management model” which describes the types of accommodation and adaptation in four teaching steps of an English lesson—lesson introduction, language input, language task, and conclusion. In all four steps, students with hearing impairment were accommodated by the sign language interpreter and the note-taker. In each step, adaptation was provided by differentiating content, process, and product. The content was differentiated by supporting background knowledge, highlighting critical features, and providing multiple examples in order to make the learning materials more accessible for both groups of students. The process was differentiated by adjusting levels of challenge for the listening task and providing choices of content for online self-study in order

adjust class activities to serve the needs of both groups of students. The product was differentiated by providing opportunities for both groups of students to demonstrate their skills based on their strength and practicing with support in cooperative group.

The findings showed that the DI&UD English instructional management model had positive effects on students' English learning achievement, social skills, and learning engagement. However the effects on the students with and without hearing impairment differed in regard to English learning achievement and learning engagement. Regarding English learning achievement, the findings showed that the DI&UD English instructional management model significantly improved reading, speaking, and writing skills of hearing students and significantly improved speaking skill of students with hearing impairment. In light of social skills, the findings showed that the DI&UD English instructional management model enhanced students' social skills in terms of openness, sharing, acceptance, support, and cooperative intentions. As for learning engagement, the findings showed that the DI&UD English instructional management model enhanced students' behavioral engagement in terms of attendance, attention, asking questions, contribution, and efforts. The model enhanced students' affective engagement in terms of feelings, attitudes, and values. The model also enhanced students' cognitive engagement in terms of understanding and applying.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

This chapter presents a summary of the study and the key findings. The results of the study were then discussed in light of previous studies with consideration of the contexts. In addition, the limitations of the study, pedagogical implications, and recommendations for further research were proposed.

5.1 Summary of the Study

The aim of this study was to develop an English instructional management model based on differentiated instruction (DI) and universal design for learning (UDL) to enhance English learning achievement, social skills, and learning engagement of undergraduate students with and without hearing impairment in inclusive English classrooms. The population of this study was Thai universities that provide inclusive education to students with disabilities, those with hearing impairment in particular. The research procedures consisted of four phases: situation analysis, model development, model implementation, and model evaluation.

The first phase was the situation analysis which aimed to investigate the learning experience of undergraduate students with and without hearing impairment in inclusive English classrooms in higher education at Thai universities in five areas: inclusive education, adaptation, accommodation, social interaction, and learning engagement. The situation analysis was conducted at two public universities that had a policy to provide inclusive education for students with disabilities and had the highest number of students with hearing impairment. The first classroom consisted of seven students with hearing impairment, one student with visual impairment, and 42

regular students. The second classroom consisted of three students with hearing impairment, two autistic students, and 21 regular students. The findings of the situation analysis showed that inclusive English classrooms gave students an opportunity to make new friends and learn to adapt themselves with people who are different from them. However, due to communication difficulty, students with hearing impairment could not contribute much when working in inclusive classrooms. It was very difficult for them to communicate with hearing students. In terms of adaptation, the teachers tended to adapt materials by using a lot of visual aids during classroom activities and highlighted key concepts. For accommodation, the universities provided sign language interpreters and test accommodation to accommodate students with hearing impairment. As for social interaction, since both groups of students did class activities in separate groups, students with hearing impairment did not have much interaction with hearing students. For learning engagement, due to communication difficulty, students with hearing impairment did participate in classroom activities as much as hearing students.

The second phase was the model development which involved conceptualizing the framework and planning the instructional procedures. To develop the model, the results of the situation analysis were combined with information gleaned from a review of the available literature and the two main concepts of accommodation and adaptation were employed.

The third phase was the model implementation which included developing the English for Communication course. To develop the course, goals and objectives based on the Thai Qualification Framework (TQF) for Thailand's Higher Education System were formulated. Then the course content was designed as a topical syllabus

around a theme ‘The first year’s university students’ life’ which ranged for 12 weeks. After that, the course was implemented in an inclusive English classroom at one university in Thailand once a week and lasted 150 minutes for each lesson. Fifty hearing students and four students with hearing impairment participated in the implementation.

The last phase was the model evaluation in which the model was evaluated by five research instruments: English learning achievement test, social skills questionnaire, learning engagement questionnaire, learning logs, and semi-structured interview. Quantitative and qualitative data were obtained to determine the effects of the model on students’ English learning achievement, social skills, and learning engagement. Descriptive statistics including Mean, Min, and Max, Standard Deviation (SD) were used to describe the English learning achievement. To compare the English learning achievement before and after the intervention, paired sample T-test was employed in the data from the hearing students while non-parametric statistics, i.e. Wilcoxon, was employed in the data from students with hearing impairment. Descriptive statistics including Mean and Standard Deviation (SD) were applied to analyze the Likert scale data from the social skills and learning engagement questionnaires. Furthermore, data coding and memo writing were employed to analyze the learning logs and semi-structured interview.

5.2 Key Findings

The research findings consisted of two parts in accordance with the following two research questions:

1. What is an English instructional management model based on differentiated instruction and universal design for learning?

2. What are the effects of an English instructional management model based on differentiated instruction and universal design for learning on English learning achievement, social skills, and learning engagement of undergraduate students with and without hearing impairment in inclusive English classrooms?

The English instructional management model was developed based on differentiated instruction and universal design for learning named “The DI&UD English instructional management model” which described the types of accommodation and adaptation in four teaching steps of an English lesson—lesson introduction, language input, language task, and conclusion. A sign language interpreter and a note-taker were provided to accommodate students with hearing impairment during the instruction. Content, process, and product - i.e. the instructional materials, class activities, and assessment tasks – were adapted based on the principles of differentiated instruction and universal design for learning to support students with and without hearing impairment in inclusive English classrooms.

The effects of the DI&UD English instructional management model on students’ English learning achievement, social skills, and learning engagement were investigated using an English achievement test, social skills questionnaire, learning engagement questionnaire, learning logs, and semi-structured interview. The findings of the model evaluation indicated that the DI&UD English instructional management model had positive effects on students’ English learning achievement, social skills, and learning engagement. However the effects on the students with and without hearing impairment differed in regard to English learning achievement and learning engagement. In terms of English learning achievement, hearing students’ reading, speaking, and writing skills were significantly improved whereas students with

hearing impairment only showed improvement in the speaking skill. In the area of social skills, the findings showed that both groups of students were open their ideas with others, shared help and learning materials with each other, accepted ideas of other group members, supported other students who had difficulty when doing the assigned task, encouraged other to participate in group discussions, and gave their contributions to the group task. As for the learning engagement, the findings showed that the students were engaged in the instruction in some aspects more than others. For behavioral engagement, hearing students attended the class, listened to the lecture, and actively worked both inside and outside the class. Students with hearing impairment attended the class, listened to the lecture, asked questions when they did not understand what they had learned, actively worked during the class activities, and had conversations with the teachers about assignments. For affective engagement, both groups of students enjoyed the work they did in class. They agreed that the class activities and teaching steps helped them understand the lesson better, the theories and concepts from this class were useful for them in real life, further study, and for their career in the future. For cognitive engagement, both groups of students understood what they had learned in class by figuring out how the information was useful in the real world. Hearing students applied what they had learned by connecting with their own experience while students with hearing impairment applied what they had learned by relating with things that fitted together.

5.3 Discussion

The findings showed that the DI&UD English instructional management model had positive effects on students' English learning achievement, social skills, and learning engagement; however the effects on the students with and without

hearing impairment differed in regard to English learning achievement and learning engagement. These findings corresponded with those of Hall, Strangman, and Meyer (2003) and Udvari-Solner et al (2005) that the integration of differentiated instruction and universal design for learning was effective to respond to the diverse needs of both groups of students by acknowledging their strengths while compensating for their limitations. The findings are in line with those of Gregory and Chapman (2007), Haager and Klingner (2005), Subban (2006), and Tomlinson (2001) that students learned best when their strengths were promoted and their limitations were accommodated in inclusive classrooms.

The DI&UD English instructional management model differed in two aspects from the models proposed elsewhere. First, the DI&UD English instructional management model provides both accommodation and adaptation, as suggested by the bureau of special education administration (2010) and Haager and Klingner (2005) while those of Hall, Strangman, and Meyer (2003) and Udvari-Solner et al. (2005) provided only adaptation. Second, the DI&UD English instructional management model was developed specially for inclusive English classrooms with students with hearing impairment specifically. No other studies have attempted to address the challenges that students with hearing impairments have in inclusive English classrooms (Hall et al., 2003; Udvari-Solner et al., 2005).

The application of accommodation and adaptation in the DI&UD English instructional management model seemed to be complementary with each other, effectively responding to the needs of all students in the inclusive classroom, as suggested by the bureau of special education administration (2010) and Haager and Klingner (2005). The accommodation seemed to help reduce the struggles of students

with hearing impairment in participating in class activities (Cawthon, 2011; Lang, 2002; Powell, Hyde, & Punch, 2014) while the adaptation of the curriculum by differentiating the content, process, and product seemed to make the materials, activities, and assessment tasks accessible to students with and without disabilities (Broderick, Mehta-Parekh, & Reid, 2010; Gregory & Chapman, 2007; Hall et al., 2003; Tomlinson, 2001; Udvari-Solner et al., 2005).

The following sections discuss the effectiveness of accommodation and adaptation that were employed in the DI&UD English instructional management model in order to promote students' strengths and accommodate their limitations.

5.3.1 Accommodation

In this study, to provide accommodation for students with hearing impairment who had difficulty in oral communication, the DI&UD English instructional management model provided a sign language interpreter and a note-taker to help support them while participating in the lesson. It was found that the sign interpreter and the note-taker were very useful to enhance learning achievement, social skills, and learning engagement for students with hearing impairment.

5.3.1.1 The sign interpreter. The findings showed that the sign language interpreter was very useful for students with hearing impairment. These findings corresponded with those of Cawthon (2011), Lang (2002), and Powell, Hyde, and Punch (2014) that the sign interpreter was intermediary to help students with hearing impairment to communicate with hearing peers and the teacher. With the help of the sign interpreter, students with hearing impairment could participate in all class activities as hearing students did. Students with hearing impairment mentioned that when they did not understand the reading materials, slides, or could not follow the

instruction, the sign interpreter helped explain the ideas to them or asked the teacher for them. In addition, the sign interpreter helped students with hearing impairment review what they had learned after the class.

However, the effectiveness of the sign interpreters may depend on the content knowledge of the sign interpreters (Foster, Long, & Snell, 1999; Lang, 2002), so a collaboration between the teacher and the sign language interpreter was utilized to accommodate students with hearing impairment. This finding corresponded with those of Haager and Klinger (2005), Ryndak and Alper (1996), and Salend (2008) that the collaborative work helped the teacher and the sign interpreter provide effective accommodation for making learning more accessible to students with hearing impairment. Prior to class, the teacher and the sign interpreter discussed the learning materials, lesson plan, and slides which helped the sign interpreter formulate ideas about the lesson which helped increase learning achievement and learning engagement of students with hearing impairment.

5.3.1.2 The note-taker. The findings showed that the note-taker was helpful for students with hearing impairment. These findings corresponded with those of Haager and Klingner (2005), Lang (2002), and Powell et al (2014) that students with hearing impairment could use the note to review what they had learned after the class which helped improve their understanding of lectures. Due to a lack of staff in Disability Support Service (DSS) in many institutions in higher education in Thailand (Suthipiyapathra, Vibulphol, & Prongsantia, 2015), peer-based strategy was employed to provide the note-taker service for students with hearing impairment. One hearing student who received the highest score from the pretest was assigned to be the note-taker who then gave the notes to students with hearing impairment after the class.

This idea corresponded with those of Gearheart et al. (1996) and Salend (2008) that the peer-based strategy helped students with hearing impairment engaged in learning. Students with hearing impairment mentioned that after the class, they talked to the note-taker and asked him/her about the lesson and what they did not understand.

5.3.2 Adaptation

In this study, the DI&UD English instructional management model provided adaptation by differentiating content, process, and product. The findings showed that the adaptation of the content, process, and product in the DI&UD English instructional management model enhanced students' learning achievement, social skills, and learning engagement. These findings agreed with those of Lee, Wehmeyer, Soukup, and Palmer (2010) that providing adaptation of curriculum helped students with disabilities engage in academic response, task management, and reduce competing response.

5.3.2.1 Content differentiation. The content was differentiated by supporting background content, highlighting key information, and providing multiple examples in order to make the learning materials more accessible.

5.3.2.1.1 Support background knowledge. In this study, video with captions was provided to support background content. A number of students found it to be helpful to watch the video that relates to the upcoming lesson—they could anticipate what topic they were about to learn in the lesson. These findings were consistent with those of Harmer (2001), Salend (2008), and Tomlinson (2001) that videos with captions could be used to introduce the learning materials. Both groups of students mentioned that video with captions included examples and ideas about what had been learned during the lesson and helped them see the interaction, which helped them

guess what happened in the video. In addition, hearing students mentioned that they could practice listening and read the captions at the same time when they did not understand the video. These findings agreed with those of Brinton (2001), Harmer (2001), and Luckner and Friend (2006) that video with captions helped students gain comprehension of what they were going to study and made the class activities more interesting.

5.3.2.1.2 Highlight critical features. In this study, reading materials were highlighted key information for students with hearing impairment. It was found that the highlighted key information enhanced learning engagement of students with hearing impairment. Students with hearing impairment mentioned that when they did not know the answers or did not understand what they had read, they looked at the highlighted information and applied that information to better understand the reading materials. These findings were consistent with those of Berent et al. (2009), Hall, Strangman, and Meyer (2003), and Salend (2008) that highlighting key information facilitated students with hearing impairment to notice the important points and understand the main concept of the lesson.

However, it was found that highlighting key features on reading materials was not effective enough to significantly improve reading skill of students with hearing impairment. Students with hearing impairment mentioned that they only learned vocabulary when they were in high school, but when reading long texts, they did not always understand the whole meaning. These findings agreed with those of Andrews (2004) and Gearheart et al. (1996) that students with hearing impairment had limited access to English language learning, so the reading process which required students to

combine information from the text with their own background knowledge to associate with meaning may be difficult for them.

5.3.2.1.3 Multiple examples. It was found that providing multiple examples improved students' learning achievement and engaged students in learning. Both groups of students mentioned that when they created a sentence or dialogue, they usually used information and ideas from the provided examples which helped them understand what they had learned. These findings agreed with those of Brinton (2001) and Hall, Strangman, and Meyer (2003) that the use of several examples supported instructional materials and enabled students to flexibly access the learning content. Hearing students indicated that this course included many examples which were easy to understand compared to reading from the text book such as texts, pictures, and videos. These findings corresponded with those of Foster, Long, and Snell (1999) that students felt better participating in the classroom when they understood the materials. However, students with hearing impairment mentioned that they needed more visual examples because sometimes they did not understand long texts. These findings agreed with those of Gearheart et al. (1996) and Hunt and Marshall (2012) that making the classroom a more visual environment was helpful for students with hearing impairment.

5.3.2.2 Process differentiation. The process was differentiated by adjusting levels of challenge and providing choices of learning content in order to adapt classroom activities to serve the needs of both groups of students.

5.3.2.2.1 Adjust levels of challenge. In this study, the listening activity was adjusted level of challenge by asking hearing students to turn their back to the blackboard or lower their head so that they could not see the captions while students

with hearing impairment watched video with captions. It was found that the adjusted listening activity engaged both groups of students, especially students with hearing impairment to participate in class activities. This finding agreed with those of Harmer (2001) and Luckner and Friend (2006) that video with captions engaged students with hearing impairment in the listening activity because they could read the captions while looking at the video which helped engage them in the listening activities. In addition, since hearing students did not see the video, when doing the listening task, students with hearing impairment indicated that they usually shared vocabulary that they remembered from the video with hearing peers which helped engage both groups of students in learning.

However, it was found that the adjusted listening activity did not significantly improve listening skill of students with hearing impairment. Students with hearing impairment said that they could not follow the caption and sometimes they could read only two to three words of the captions which was not enough to help them understand the entire conversation.

5.3.2.2.2 Choices of learning content. In this study, students were provided choices of content for online self-study. It was found that providing choices for online self-study helped improve students' learning achievement and engagement. Both groups of students mentioned that they could choose websites or exercises according to their preferences. These findings agreed with those of Gregory and Chapman (2007), Hall et al. (2003), and Tomlinson (2001) that providing choices of content engaged students in learning and met different learning needs of both groups of students. Hearing students indicated that when they practiced listening from online self-study, they could choose to listen to the audio, read the audio script, or listen to

and read the audio script at the same time which helped them gain listening comprehension. Students with hearing impairment mentioned that the exercises from online self-study contained many pictures which engaged them in doing exercises and helped them understand the learning content. These findings corresponded with those of Blamires (1999), Brinton (2001), Harmer (2001), and Kurtt (2006) that the use of media provided students multiple input sources to address the needs of both visual and auditory learners, which helped students get benefit and access to authentic English and motivated students to continue studying on their own. In addition, both groups of students also mentioned that they could check their answers via the provided answer keys immediately which helped them know whether they had done was right or wrong. These findings corresponded with those of Cheng and Wang (2007) and Salend (2008) that feedback could guide students to improve their learning and make additional effort. However, one hearing student mentioned that since the online self-study provided the answer keys, she did not make any effort to practice exercise because she usually looked at the answer keys before practicing the exercise.

5.3.2.3 Product differentiation. The product was differentiated by providing opportunities to practice with support and demonstrating associated skills through their most effective modality.

5.3.2.3.1 Practice with support. In this study, students were provided opportunities to practice with support by working in cooperative groups. The findings showed that students demonstrated social skills in terms of openness, sharing, acceptance, support, and cooperative intensions when working cooperative groups. These findings corresponded with those of Johnson and Johnson (1994), Putnam (1995), and Richards and Rodgers (2001) that working in cooperative group required

students to share ideas, feelings, information, accept, support, and work cooperatively with other group members. Hearing students said that they learned to listen to others, share information, discuss and accept different ideas, and help each other to complete group tasks. Students with hearing impairment indicated that they always shared their reading materials which highlighted key information with hearing peers and asked hearing peers how they could help to complete a group task.

Both groups of students also mentioned that working in cooperative groups helped develop positive relationships with each other which fostered their learning development and acceptance of individual difference. Hearing students mentioned that working in cooperative groups provided them opportunities to get to know new friends from different majors, share different ideas, and learn different points of view. Hearing students also said that working with hearing-impaired peers helped them better understand hearing-impaired peers and accept that even though hearing impaired peers were physically different from them, they could learn together and help each other. Students with hearing impairment indicated that they liked working with hearing peers. When hearing impaired students had problems in completing assignments or did not understand the lesson, hearing peers tried to help them which made them feel acceptance and belonging to a group. These findings were consistent with those of Haager and Klingner (2005) and Wauters and Knoors (2008) that practicing with support by working in cooperative group enhanced students' emotional development.

However, it was found that placing students with hearing impairment in the same group with hearing peers sometimes led to difficulty in communicating. These findings corresponded with those of Richardson, Long, and Foster (2004) that

students with hearing impairment failed to achieve learning engagement when they could not communicate effectively with their peers. Students with hearing impairment mentioned that they sometimes wanted to discuss ideas but it was sometimes difficult for them to explain their ideas to hearing peers in writing. In addition, there was the only one sign interpreter in the class but there were four students with hearing impairment working in separate groups. When students with hearing impairment had problems communicating, it took some time for the sign interpreter to come to their group to help communicate with hearing peers. However, students with hearing impairment indicated that despite these issues, they preferred to work in a group with hearing peers. Students with hearing impairment mentioned that hearing peers could often explain things they did not understand. If hearing peers did not understand what they wanted to say, they could ask the sign interpreter to help communicate with hearing peers. Students with hearing impairment added that when working in the same group with hearing-impaired peers, it was easy for them to discuss ideas but when they all did not understand the lesson, they could not help each other.

5.3.2.3.2 Opportunities for demonstrating skill. In this study, students were provided opportunities to demonstrate their speaking and writing skills based on their strengths.

The speaking skill was differentiated because hearing students used English to perform the speaking task, whereas students with hearing impairment wrote a dialogue in English and used Thai sign language to perform the speaking task with the support of the sign interpreter to interpret for the whole class. The findings showed that both groups of students significantly improved speaking skill. Hearing students

mentioned that practicing speaking English helped them learn pronunciation and made them feel more confident when speaking English. Students with hearing impairment indicated that they tended to easily forget what they had learned when they only read materials or just looked at the sign interpreter to interpret, so using the sign language to perform what they had learned helped them understand the lesson better because they could better express their ideas and feelings. These findings agreed with those of Moores (2001) and Paul (2001) that providing opportunities for students with hearing impairment used sign language to perform what they had learned helped them represent words and express meanings more effectively. These findings also corresponded with those of Alberta Education (2010), Hall et al. (2003), and Tomlinson (2001) that providing opportunities for students to demonstrate skills through the most effective modality helped students understand their learning which was important to increase their learning achievement and engage them in learning environment.

The writing skill was differentiated by offering because hearing students revised their draft and submitted the writing task within the class period, whereas students with hearing impairment were provided extended time to revise their draft and submit their writing task by noon the next day. It was found that providing extended time was not effective to significantly improved writing skill of students with hearing impairment. Students with hearing impairment mentioned that they only studied English vocabulary and never created any sentences when they were in high school. When starting to write, they tried to arrange vocabulary that they had in their memory and combined it into a sentence. Students with hearing impairment also mentioned that sometimes they did not have any ideas to write in English, so they

used Google to translate from Thai into English. In addition, the differences between the structures of English and Thai sign language might influence their grammar development. Students with hearing impairment indicated that they did not understand when an apostrophe (') was used in a negative sentence such as "don't". These findings were consistent with those of Andrews et al. (2004), Bisol et al. (2009), Paul (2001), and Strassman and Schirmer (2014) that students with hearing impairment tended to use shorter sentences, repetition, and less-flexible word order in their writing.

5.3.3 Learning differences between students with and without hearing impairment

Based on the findings, it was found that providing the sign language interpreter contributed to differences of learning engagement between hearing students and students with hearing impairment.

During the class activities, it was discovered that students with hearing impairment always asked questions of the teachers while hearing students only sometimes asked. Students with hearing impairment mentioned that with the support of the sign interpreter, they could communicate with the teacher better. So, when they did not understand what they had learned, they always asked the sign interpreter help them communicate with the teacher. The findings showed that hearing students usually asked peers or used social media to search for more information but students with hearing impairment mentioned that they did not have any ideas or English background knowledge to search for more information and learn from social media by themselves. As a result, students with hearing impairment always asked questions to the teacher. In addition, the findings also showed that students with hearing

impairment always actively work with hearing peers during the class activities.

Students with hearing impairment mentioned that when they had problem in communicating with hearing peers, they asked the sign interpreter to help ask hearing peers for them.

Outside the class, it was found that students with hearing impairment tended to work on the assignment alone while hearing students often worked with their classmates. These findings might contribute to communication difficulty (Deaf Port Project, 2008; Hunt & Marshall, 2012; Paul, 2001). During the class, the sign interpreter could help them communicate with hearing peers but outside the class, they had to communicate with others by themselves. So, it could be difficult for them to communicate and work with hearing peers outside class. Students with hearing impairment also indicated that even though it was easy to communicate with hearing impaired peers, they often did not understand the lesson, so they did not ask for help from hearing impaired peers. Because hearing students majored in Law and Public Administration while students with hearing impairment majored in Special Education, after class, they separated and worked with others having the same major. As a result, students with hearing impairment usually worked alone after the class.

These findings also support the strength of the DI&UD English instructional management model that mere adaptation was not sufficient to support students with hearing impairment, but the appropriate instructional practice in inclusive classrooms with students with hearing impairment must provide accommodation to support students with hearing impairment. These findings agreed with those of Cawthon (2011), Lang (2002), and Powell et al. (2014) that the sign language interpreter was the most effective support service in inclusive classrooms, reducing struggles in social

and academic integration of students with hearing impairment. In addition, these findings corresponded with those of Choate (2004), Friend and Bursuck (2002), and Gearheart et al. (1996) that inclusive education was the most appropriate education and least restrictive environment (LRE) for students with hearing impairment which helped them build relationships with hearing classmates, establish a wider variety of communication techniques, compete academically with hearing classmates, and prepare to live in hearing world after completing their education.

5.4 Limitations of the Study

To interpret the findings in the present study, the following limitations have to be taken into considerations.

First, the lack of English knowledge of the sign language interpreter might contribute to the limitation of this study. Even though the researcher collaborated with the sign language interpreter about the lesson, there were some unplanned topics that were initiated by the students during the lesson. These unplanned topics may have affected the ability of the sign interpreter to interpret some content, which may in turn affected the learning engagement of the students with hearing impairment during those learning moments.

Second, since students with hearing impairment in Thailand do not learn English sign language such as American Sign Language (ASL) or British Sign Language (BSL); the interpretation of the content in the lesson was conducted in two steps—from English into Thai, then from Thai to Thai sign language. In addition, the differences between the structures of Thai sign language and English may influence the students' grammar development in the form of language transfer. As a result,

some content then may have been missing during the interpretation process. This could also have affected the learning of students with hearing impairment.

5.5 Pedagogical Implications

The research findings suggest the following implications for English teachers who work with students with hearing impairment and inclusive educators in general.

First, the findings showed that the DI&UD English instructional management model provided appropriate support services for both groups of students in the inclusive English classroom. Since the design of the DI&UD English instructional management model, especially the types of accommodation and adaptation, was based on the information obtained from the situation analysis, inclusive educators should give important to conducting a situation analysis when designing instructional models so that the model could respond to the diverse needs of the students in the classroom.

Second, the evaluation of the DI&UD English instructional management model showed that the model could be used to enhance English speaking skills of undergraduate students with and without hearing impairment. For the enhancement of the other three skills, the model should be adjusted as follows:

As for the listening skill, the findings showed that both groups of students did not significantly improve their listening skill. It would recommend to give students any pictures related to the story before commencing the listening task in order to enhance students' listening comprehension. Giving students the pictures before the listening activity helps develop students' mental representations which makes listening more comprehensible and helps students formulate correct hypotheses and increase their interest (Kashani et al., 2011).

As for the reading skill, the findings showed that students with hearing impairment did not significantly improve their reading skill. It would recommend to fade the highlighted critical features. The highlighted key information may be provided more during the first period of the model implementation, then the highlights may be reduced in order for students with hearing impairment to learn to adapt themselves in reading materials.

As for the writing skill, the findings showed that students with hearing impairment did not significantly improve their writing skill. It would be suggested to enhance visual input via coding by using bolding and contrast in font sizes. The visual input via coding helps facilitate students with hearing impairment to improve their writing and retain this improvement with a modest decrease (Berent et al., 2009).

Third, the findings showed that sometimes students with hearing impairment had difficulty in communicating with hearing students when working in cooperative groups because there was only one sign language interpreter in each class. Since cooperative group work is one of the key features of the DI&UD English instructional management model, teachers or educators who are interested in implementing the model must anticipate and provide more interpreters for the group work time, for example, using friends-help-friends (buddy system). Hearing students, especially those who know sign language, may be assigned as the buddy with students with hearing impairment. During the class activity, the hearing buddy should sit between students with hearing impairment and work in the same group with them so the hearing buddy can explain, give examples, or demonstrate the activities that the teacher uses in class to enhance learning engagement of students with hearing

impairment. This could also foster positive relationship between hearing students and students with hearing impairment.

Finally, the findings showed that the students with hearing impairment had difficulty with learning English partially due to the fact that they do not learn English sign language. Therefore, the sign language interpretation cannot be done directly from the English language to English sign language, instead it must be translated into Thai language first, then from Thai to Thai sign language. Thailand should promote the study of English sign language in order to enhance the success of English language learning and teaching.

5.6 Recommendations for Further Study

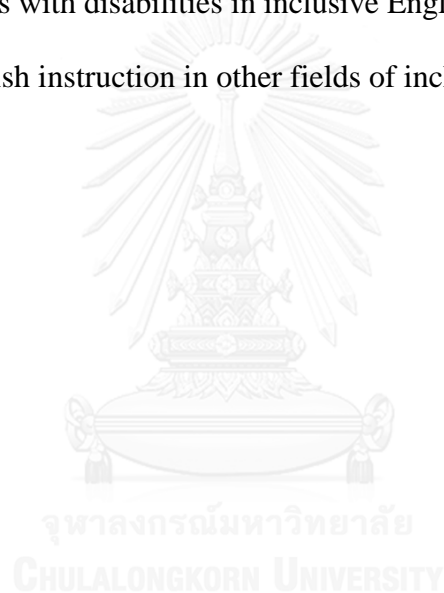
Based on the research findings, the recommendations for further study are as follows:

First, in the DI&UD English instructional management model, several types of accommodation and adaptation are provided. Further research can be conducted to investigate the effectiveness of each individual type since in the natural classroom settings, not all types of accommodation and adaptation may be available. By determining which type of accommodation and adaptation is the most effective or prevalent, English educators will be able to design instruction that is appropriate for their local contexts and resources.

Second, the findings showed that providing highlight critical feature on reading materials for students with hearing impairment did not significantly improve their reading skill. Further research can be conducted techniques to highlight critical features in order to provide the most effective of reading materials to suit the needs of

students with hearing impairment which will help improve their reading achievement and learning engagement.

Finally, since the DI&UD English instructional management model was developed based on the principles of differentiated instruction and universal design for learning to provide instructional practices to suit the needs of students with and without disabilities in inclusive classrooms in general, further research can be conducted to investigate the DI&UD English instructional management model with other types of students with disabilities in inclusive English classrooms which may help expand the English instruction in other fields of inclusive education.



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Appendix A: Experts' Comments on Semi-Structured Interview for Situation

Analysis

Original Items	Experts' Comments
Adaptation	
What teaching methods, materials, and assessment do you use in your English inclusive classrooms? Which one works well in English inclusive classrooms? How?	The question should be divided into three categories: methods, materials, and assessment techniques.
Social skills	
During the classroom activities in inclusive English classrooms, how do students interact with each other?	The question should divide the interaction into each group of students: hearing students, students with hearing impairment, and students with and without hearing impairment
Learning engagement	
During the classroom activities in inclusive English classrooms, how do students get involved in activities?	The question should divide the involvement in class activities into each group of students: hearing students and students with hearing impairment.

Appendix B: Long-Range Plan

Topics/ Lessons	Learning outcomes	Content	Assessment	Course Learning Outcomes
Making friends				
Lesson 1:	To write personal information and share in social media	FB's profile	Write FB's profile	1.1, 1.2, 2.1, 3, 4, 5
Lesson 2	To greet and get to know new friends	New friends	Create a dialogue for greeting and getting to know new friends and do a role-play	1.1, 1.2, 2.1, 3, 4, 5
Lesson 3	To discuss ideas about small talk.	Small talk	Listen to 'Small talk' and complete a dialogue and answer questions.	1.1, 1.2, 2.1, 3, 4, 5
Lesson 4	To discuss how people in different cultures make a small talk.	Small talk in different cultures	Read 'Making a small talk around the world' and summarize how people in different cultures make a small talk.	1.1, 1.2, 2.1, 2.3, 3, 4, 5
University and town				
Lesson 5	To discuss important events in life	Important events in life	Listen to a biography of an important person and describe an important event in life.	1.1, 1.2, 2.1, 3, 4, 5
Lesson 6	To ask for and give local directions	Local directions	Create a dialogue to ask for and give directions in NRRU and do a role-play.	1.1, 1.2, 2.1, 3, 4, 5

Long-Range Plan (continued)

Topics/ Lessons	Learning outcomes	Content	Assessment	Course Learning Outcomes
Lesson 7	To discuss ideas about tourist attractions in local areas.	Korat tourist attractions	Read tourist attractions in Korat and answer questions	1.1, 1.2, 2.1, 2.2, 3, 4, 5
Lesson 8	To write e-mail to recommend tourist attractions in local areas.	E-mail about tourist attractions recommendation.	Write e-mail to old friends to recommend tourist attraction in Korat.	1.1, 1.2, 2.1, 2.2, 3, 4, 5
Problems for freshmen				
Lesson 9	To write a weekly-study plan.	Time management	Write a weekly-study plan.	1.1, 1.2, 2.1, 3, 4, 5
Lesson 10	To discuss ways to relax.	Relaxation techniques	Listen to 'Five proven relaxation techniques' and discuss ways to relax.	1.1, 1.2, 2.1, 3, 4, 5
Lesson 11	To discuss ideas and match drugs to the right health problems	Drug labels	Read 'Drug labels' and discuss ideas and match drugs to the right health problems.	1.1, 1.2, 2.1, 3, 4, 5
Lesson 12	To create a dialogue about giving health advice	Health advice	Create a dialogue about giving health advice and do a role-play.	1.1, 1.2, 2.1, 3, 4, 5

Appendix C: Sample of Lesson Plan: Speaking

Lesson plans

Lesson 2: New friends

Unit 1: Making friends

Thursday: 10.20-12.50

Class section: P9

Course: English instructional management

Academic Year: 1/2015

1. Learning outcomes

- Students will be able to create a dialogue for greetings and getting to know new friends.

2. Content

2.1 Greeting and introducing expressions

How are you? Long time no see. What's up?

Nice to meet you. I don't think we have met before.

2.2 Present of 'Be'

Is that you? Who is your friend?

2.3 Stress and intonation

Who is your friend?

Is that/you?

3. Instructional activities:

Remark for abbreviation:

T = Teacher Ss = Students SI = Sign interpreter

Hs = Hearing students HIs = Students with hearing impairment

Step 1: Lesson introduction

Purposes	Activities		
	T	Hs	HIs
- To present goals and	- Asks Ss a question and	- Listen to T.	- Look at SI to interpret what T is explaining.

Purposes	Activities		
	T	Hs	HIIs
objectives of the lesson (5 minutes).	<p>shows the question on PowerPoint:</p> <ol style="list-style-type: none"> How long have you studied at NRRU? Do you have any new friends? <p>- Asks Ss to share ideas with the class.</p> <p>- Writes Ss' answers on PowerPoint.</p> <p>- Tells Ss about objectives the lesson and shows on PowerPoint.</p>	<p>- Share ideas with the class.</p> <p>- Listen to other Ss' ideas.</p> <p>- Listen to T.</p> <p>- Look at PowerPoint.</p>	<p>- Use Thai sign language to share ideas with the class.</p> <p>- SI helps interpret what HIIs are talking about for class.</p> <p>- Look at SI to interpret what other Ss are talking.</p> <p>- Look at SI to interpret what T is explaining.</p> <p>- Look at PowerPoint.</p>

Ss' answers may include:

1. - About three weeks.

- Almost a month.

2. - Yes, I do.

- No, I don't.

Purposes	Activities		
	T	Hs	HIIs
	<ul style="list-style-type: none"> • Today we will learn about how to greet people and make new friends. • Also, we will have to create a dialogue and do a role-play for greeting and making new friends. 		
- To activate background knowledge (10 minutes).	<p>group of three selected by themselves.</p> <p>- Asks Ss to watch a video with captions about “Greeting and meeting new people”(See Video_Greeting and meeting new people).</p>	<p>- Hs form a group of three.</p> <p>- Watch a video with captions.</p>	<p>- HIIs form the same group.</p> <p>- SI helps HIIs to form the group.</p> <p>- Watc a video with captions.</p>

Purposes	Activities		
	T	Hs	HIIs
	<p>- After watching the video, asks Ss a question and shows the question on PowerPoint:</p> <ul style="list-style-type: none"> • What do you think the video is about? <p>-Asks each group to share ideas with the class.</p> <p>- Writes Ss' answers on PowerPoint.</p> <p>- Asks Ss questions and shows the questions on PowerPoint:</p>	<p>- Discuss ideas with other group member.</p> <p>- Share ideas with the class.</p> <p>- Listen to other Ss' ideas.</p> <p>- Discuss ideas with other group members.</p>	<p>- Use Thai sign language or write in English or Thai to discuss ideas with other group members.</p> <p>- Use Thai sign language to share ideas with the class.</p> <p>- SI helps interpret into Thai about what HIIs have said for the class.</p> <p>- Look at SI to interpret what other Ss are talking.</p> <p><u>Ss' answers may include:</u></p> <ul style="list-style-type: none"> - <i>It's about friends who haven't met for a long time.</i> - <i>A friend introduces new friends.</i> <p>- Use Thai sign language or write in English or Thai to discuss ideas with other group members.</p>

Purposes	Activities		
	T	Hs	HIIs
	<p>1. What do people in the video say when meeting friend?</p> <p>2. What do people in the video say when introducing someone?</p> <p>- Asks Ss to share ideas with the class.</p> <p>- Writes Ss' answers on PowerPoint.</p>	<p>- Share ideas with the class.</p> <p>- Listen to other Ss' ideas.</p>	<p>- Use Thai sign language to share ideas with the class.</p> <p>- SI helps interpret what HIIs say for class.</p> <p>- Look at SI to interpret what other Ss are talking.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px;"> <p><u>Ss' answers may include:</u></p> <p>1. <i>Greeting expressions:</i></p> <ul style="list-style-type: none"> - <i>Kris, is that you?</i> - <i>Long time no see.</i> <p>2. <i>Introducing expressions:</i></p> <ul style="list-style-type: none"> - <i>This is my wife, Kathleena.</i> - <i>Nice to meet you.</i> </div>

Purposes	Activities		
	T	Hs	HIIs
	- Asks Ss to conclude expressions about greeting and introducing together.	- Conclude expressions about greeting and introducing.	- Use Thai sign language to conclude expressions about greeting and introducing. - SI interprets what HIIs are talking about.

Step 2: Language input

Purposes	Activities		
	T	Hs	HIIs
- To learn expressions about greeting and meeting new people (10 minutes).	- Asks Ss to form the same group. - Gives Ss a worksheet about expressions for greeting and meeting new people (See Worksheet_Expressions). - Asks each group to discuss ideas and choose the words from the box to match with the right	- Sit in the same group. - Look at the worksheet. - Discuss ideas with other group members and complete the worksheet.	- Sit in the same group. - Look at the worksheet. - Use Thai sign language to discuss ideas with other group members and complete the worksheet.

Purposes	Activities		
	T	Hs	HIIs
	<p>expressions.</p> <ul style="list-style-type: none"> - Asks Ss to share ideas with the class. - Asks Ss to conclude the expressions about greeting and meeting new people. 	<ul style="list-style-type: none"> - Share ideas with the class. - Listen to other Ss' ideas. - Conclude the expressions about greeting and meeting new people. 	<ul style="list-style-type: none"> - Use Thai sign language to share ideas with the class. - SI helps interpret what HIIs are talking about for class. - Look at SI to interpret what other Ss are talking. - Use Thai sign language to conclude the expressions about greeting and meeting new people. - SI interprets what HIIs are talking about for class.
<p>- To learn language used in dialogue for greeting and meeting new people (15 minutes).</p>	<ul style="list-style-type: none"> - Asks Ss to form the same group. - Gives Ss a dialogue about meeting and greeting new people (See Dialogue_Greeting 	<ul style="list-style-type: none"> - Sit in the same group. - Look at the dialogue. 	<ul style="list-style-type: none"> - Sit in the same group. - Look at the dialogue.

Purposes	Activities		
	T	Hs	HIs
	<p>and meeting people</p> <p>- Asks each group to discuss ideas and choose the correct expressions in the box to complete the dialogue.</p> <p>- Asks each group to share ideas with the class.</p> <p>- Asks the whole class to check answers (See Worksheet_Dialogue for greeting and meeting people_Answers</p>	<p>- Discuss ideas with other group members to complete the dialogue.</p> <p>- Share ideas with the class.</p> <p>- Listen to other Ss' ideas.</p> <p>- Check the answers together.</p>	<p>- Use Thai sign language or write in English or Thai to discuss ideas with other group members to complete the dialogue.</p> <p>- SI helps HIIs communicate with a partner if it's needed.</p> <p>- Use Thai sign language to share ideas with the class.</p> <p>- SI helps interpret into Thai about what HIIs have said for the class.</p> <p>- Look at SI to interpret what other Ss are talking.</p> <p>- Check the answers together.</p>

Purposes	Activities		
	T	Hs	HIs
	key).		
<p>- To learn stress and intonation (15 minutes).</p>	<p>- Before watching the video again asks Ss a question and shows questions on PowerPoint:</p> <ul style="list-style-type: none"> • I would like you to watch the video again and notice how to pronounce questions and statements? <p>- Asks Ss to watch the video with captions.</p> <p>- Asks each to discuss ideas.</p>	<p>- Listen to T.</p> <p>- Watch the video with captions.</p> <p>- Discuss ideas with other group members.</p>	<p>- Look at SI to interpret what T is explaining.</p> <p>- SI informs HIIs that we are learning pronunciation so that HIIs have to read the audio-script and notice the rise and fall of the arrow for statements and questions.</p> <p>- Read the script with intonation marks (see Script for intonation).</p> <p>- Use Thai sign language or write in Thai or English to discuss ideas with a partner.</p> <p>- SI helps HIIs communicate with a partner if it's needed.</p>

Purposes	Activities		
	T	Hs	HIIs
	<ul style="list-style-type: none"> - Asks each group to share ideas with the class. 	<ul style="list-style-type: none"> - Share ideas with the class. - Listen to other Ss' ideas. 	<ul style="list-style-type: none"> - Use Thai sign language to share ideas with the class. - SI helps interpret into Thai about what HIIs have said for the class. - Look at SI to interpret what other Ss are talking about.
	<ul style="list-style-type: none"> - Writes Ss' answers on PowerPoint. 	<p><u>Ss' answers may include:</u></p> <ul style="list-style-type: none"> - <i>For statements and Wh-questions, we stress on the last word of the sentence, then the voice falls.</i> - <i>Yes/No questions, we stress the last word of the sentence, then the voice rises.</i> 	
	<ul style="list-style-type: none"> - Reads the dialogue and asks Ss to repeat after. - Asks Ss to conclude how to pronounce and stress statements and questions together. 	<ul style="list-style-type: none"> - Read the dialogue and repeat after T. - Conclude how to pronounce statements and questions. 	<ul style="list-style-type: none"> - Read the audio-script again. - Look at SI to interpret what Hs are concluding about pronunciation.
<ul style="list-style-type: none"> - To practice speaking (15 minutes). 	<ul style="list-style-type: none"> - Asks Ss to form the same group. 	<ul style="list-style-type: none"> - Sit in the same group. 	<ul style="list-style-type: none"> - Sit in the same group.

Purposes	Activities		
	T	Hs	HIIs
	<ul style="list-style-type: none"> - Asks each group to use the dialogue from the video and assign a role for each group member and practice speaking. - Asks each group member to change the role. 	<ul style="list-style-type: none"> - Assign the role for each group member and practice speaking. - Change the role and practice speaking. 	<ul style="list-style-type: none"> - Assign the role for each group member and use Thai sign language to practice speaking. - Change the role and use Thai sign language to practice speaking.

Step 3: Language task

Purposes	Activities		
	T	Hs	HIIs
<ul style="list-style-type: none"> - To create a dialogue for greeting and meeting new friends (30 minutes). 	<ul style="list-style-type: none"> - Asks Ss to form the same group. - Gives Ss a role-play scenario for greeting and meeting new people (See Role-play scenario). 	<ul style="list-style-type: none"> - Sit in the same group of Hs. - Read the role-play scenario. 	<ul style="list-style-type: none"> - Sit in the same group of HIIs. - Read the role-play scenario
<ul style="list-style-type: none"> - To do a role play (25 minutes). 	<ul style="list-style-type: none"> - Asks Ss to choose a role and create a dialogue. - Random five Hs 	<ul style="list-style-type: none"> - Choose one role to create a dialogue. - Use English to 	<ul style="list-style-type: none"> - Choose one role to create a dialogue. - Give the dialogue to

Purposes	Activities		
	T	Hs	HIs
	groups and one HIs group to do a role-play.	perform the role-play.	T. - Use Thai sign language to perform the role-play. - SI help interpret what HIs are speaking for class.

Step 4: Conclusion

Purposes	Activities		
	T	Hs	HIs
- To summarize what had learned about the lesson (5 minutes).	- Concludes what had learned from this lesson. - Shows the conclusion on PowerPoint.	- Listen to T's conclusion.	- Look at SI to interpret what T is explaining.

Purposes	Activities		
	T	Hs	HIIs
	<p><u>Conclusion:</u></p> <ul style="list-style-type: none"> - What we had learned from this unit is about greeting and introducing new people and create a dialogue for greeting and meeting new people. - For expressions, we learn expressions used for greeting, introducing people, introducing yourself, responding to introduction, and on leaving. - For pronunciation, we learn how to stress and intonation statements and questions. Wh-questions and statements, we stress on the last word of the sentence, then the voice falls. Yes/No questions, we stress the last word of the sentence, then the voice rises. - For grammar, we learn the present simple of 'Be'. For yes-no question, the questions start with Is/Am/Are + subject. 		
- To give feedback about what had learned in class (5 minutes).	- Asks Ss if they have some questions about what had learned in class.	- Ask questions about what they don't understand relating to the lesson.	- Use Thai sign language or write in Thai or English to ask questions about what they don't understand relating to the lesson. - SI helps interpret what HIIs are talking
- To practice what had	- Asks Ss to work after class for online self-study by	- Listen to T explains about online self-study.	- Look at SI to interpret what T is explaining about online self-study.

Purposes	Activities		
	T	Hs	HIs
learned in class for online self-study (5 minutes).	doing exercises about present simple of 'Be' and 'greeting and introduction'. Students can choose the provided websites according to their preferences. (See Extra class online self-study). (Class dismissed)		

4. Materials and Equipment

- 4.1 Video clips with captions
- 4.2 PowerPoint
- 4.3 Handouts
- 4.4 Worksheets

5. Assessment

- Students create a dialogue for greeting and meeting new people.

6. Extra class online self-study

- 6.1 http://www.myenglishpages.com/site_php_files/grammar-exercise-be-present.php
- 6.2 <http://www.focus.olsztyn.pl/en-exercises-for-present-simple.html#.V2oXZPmLTIU>
- 6.3 <http://www.english-at-home.com/lessons/speaking-exercise-greetings-introductions/>

7. Reflection



Lesson 2: Worksheet Expressions

Directions: Match the word in the box with the correct expressions

Greeting

Introducing people

Introducing yourself

On leaving

Responding to introduction

How do you do?

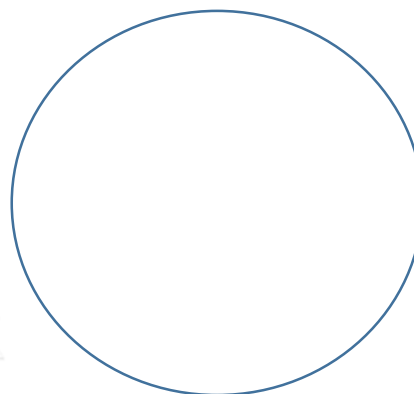
Good morning / afternoon / evening

How are you?

Hello

Hi, how's it going?

What's up?

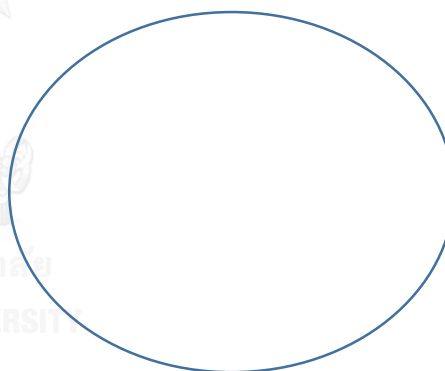


Ken, this is Steve.

Peter, I'd like you to meet Mary.

May I introduce you to Helen.

Helen, do you know Peter?



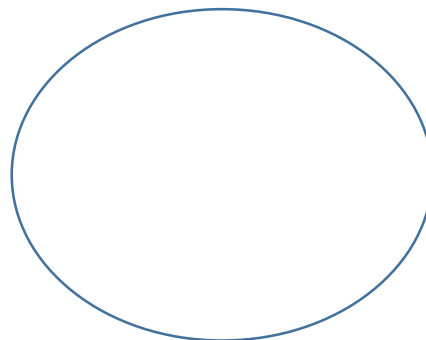
My name is Helen

I am Peter.

My friends call me Jenny.

You can call me Emily.

I don't think we've met (before)



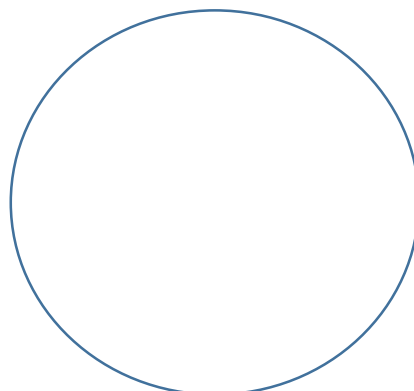
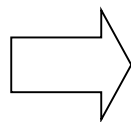
It's a pleasure to meet you.

Nice to meet you, Tom.

Pleased to meet you.

Glad to see you.

Hi, Linda. How are you?

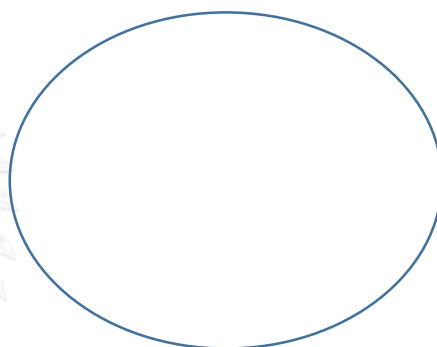


Good bye

Bye

See you later

See you around



Lesson 2: Dialogue_Greeting and meeting new friends

For hearing students

Directions: Choose the correct phrases in the box to complete the dialogue.

a. Long time no see	b. It's good to see you
d. This is Terry	e. Who is your friend?
f. Nice to meet you, Kathleena	g. I'm pleased to meet you

Terry: Kris, is that you?

Kris: Terry, fancy meeting you here. 1)_____

Terry: It's has been a long time. 2)_____

Kris: This is my wife, Kathleena.

Terry: 3)_____.

Kris: Darling. 4)_____ We played on the same basketball team in high school.

Kathleena: 5)_____, Terry.

Kris: We are about to have dinner.

Kathleena: Would you like to join us?

Terry: Oh, thanks. But I'm having dinner with my mother tonight and I must be going.

Kris: 6)_____

Terry: Good to see you too. Bye.

Kris: Bye.

Kathleena: Bye.

Lesson 2: Dialogue_Greeting and meeting new friends

For students with hearing impairment

Directions: Choose the correct phrases in the box to complete the dialogue.

- | | |
|--------------------------------|----------------------------|
| a. Long time no see | b. It's good to see you |
| d. This is Terry | e. Who is your friend? |
| f. Nice to meet you, Kathleena | g. I'm pleased to meet you |

Terry: Kris, is that you?

Kris: Terry, fancy meeting you here. 1) _____

Terry: It's has been a **long time**. 2) _____

Kris: This is my wife, **Kathleena**.

Terry: 3) _____.

Kris: Darling. 4) _____ We played on
the same basketball team in high school.

Kathleena: 5) _____, **Terry**.

Kris: We are about to have dinner.

Kathleena: Would you like to join us?

Terry: Oh, thanks. But I'm having dinner with my mother
tonight and I must be going.

Kris: 6) _____

Terry: **Good to see you** too. Bye.

Kris: Bye.

Kathleena: Bye.

Lesson 2: Dialogue_Greeting and meeting new friends_Answers key

Directions: Choose the correct phrases in the box to complete the dialogue.

a. Long time no see	b. It's good to see you
d. This is Terry	e. Who is your friend?
f. Nice to meet you, Kathleena	g. I'm pleased to meet you

Terry: Kris, is that you?

Kris: Terry, fancy meeting you here. Long time no see.

Terry: It's has been a long time. Who is your friend?

Kris: This is my wife, Kathleena.

Terry: I'm pleased to meet you, Kathleena.

Kris: Darling. This is Terry. We played on the same basketball team in high school.

Kathleena: Nice to meet you, Terry.

Kris: We are about to have dinner.

Kathleena: Would you like to join us?

Terry: Oh, thanks. But I'm having dinner with my mother tonight and I must be going.

Kris: It's good to see you.

Terry: Good to see you too. Bye.

Kris: Bye.

Kathleena: Bye.

Lesson 2: Worksheet_Verb 'Be'**For hearing students**

Directions: Rearrange the sentences in the correct order.

1. Henry / where / from / is ?

2. Are / Canada / from / you ?

3. from / I / Korat / am

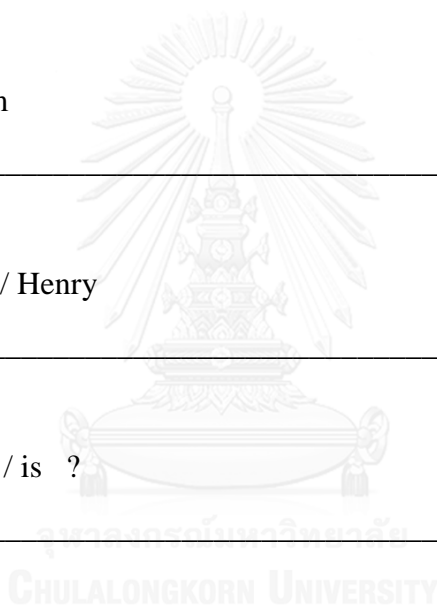
4. is / America / from / Henry

5. What / name / your / is ?

6. name / my / Helen / is

7. you / How / are / old ?

8. old / I / years / eighteen / am



Lesson 2: Worksheet_Verb 'Be'
For students with hearing impairment

Directions: Rearrange the sentences in the correct order.

1. Henry / **where** / from / is ?

2. **Are** / Canada / from / you ?

3. from / **I** / Korat / am

4. is / America / from / **Henry**

5. **What** / name / your / is ?

6. name / **my** / Helen / is

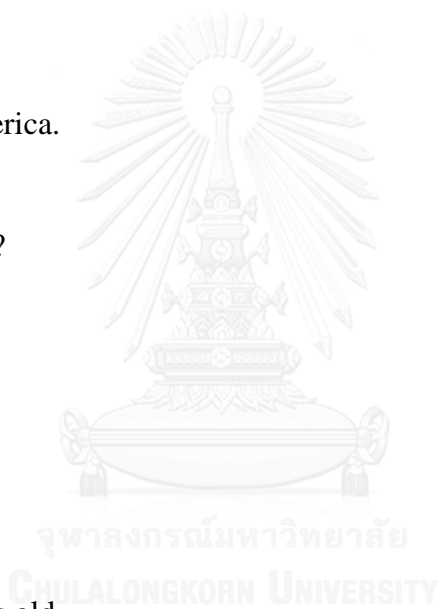
7. you / **How** / are / old ?

8. old / **I** / years / eighteen / am

Lesson 2: Worksheet _ Verb 'Be' _ Answers key

Directions: Rearrange the sentences in the correct order.

1. Where is Henry from?
2. Are you from Canada?
3. I am from Korat
4. Henny is from America.
5. What is your name?
6. My name is Helen.
7. How old are you?
8. I am eighteen years old.



Lesson 2: Script_Pronunciation

- Terry: Kris, is that you?
- Kris: Terry, fancy meeting you here. Long time no see.
- Terry: It's has been a long time. Who is your friend?
- Kris: This is my wife, Kathleena.
- Terry: I'm pleased to meet you, Kathleena.
- Kris: Darling. This is Terry.
We played on the same basketball team in high school.
- Kathleena: Nice to meet you, Terry.
- Kris: We are about to have dinner.
- Kathleena: Would you like to join us?
- Terry: Oh, thanks.
But I'm having dinner with my mother tonight and I must be going.
- Kris: It's good to see you.
- Terry: Good to see you too. Bye.
- Kris and Kathleena: Bye.

Lesson 2: Role-play_Greeting and getting to know new people

Directions: Each member in a group has to choose one role, Role A, B, or C. Study and follow the role.

Role A:

Create your own personal information and name. You graduated from Suranaree Wittaya School.

In this role play, you have started working at an international company for five years. And in this scenario, you are waiting to watch a movie with a foreign colleague. Then you see one of your old friends from high school buying Pop-corns and drinks. You haven't met him/her or a long time. Go and greet him/her. Also introduce your foreign colleague to him/her.

Role B:

Create your own personal information and name. You graduated from Suranaree Wittaya School ten years ago. In this role play, you are buying pop-corns and drinks at a movie theater.

Role C:

In this role play, you are a foreigner who is working at an international company. **Create your personal information and name.** You are now waiting to watch a movie with a Thai colleague.

Appendix D: English Achievement Test Specification

Tests	Formats	Tasks		Course learning outcomes	
		Pretest	Posttest	Pretest	Posttest
Listening	Multiple choices	Listen to a conversation	Listen to a conversation	2.3 (items 14,16)	2.3 (items 14,16)
	10 items (15 minutes).	between two people and a monologue.	between two people and a monologue.	3 (understanding level: items 1, 3, 5, 7, 9), (Analyzing level: items 5, 7, 8, 10).	3 (understanding level: items 1, 2, 3, 4, 6, 9), (Analyzing level: items 5, 7, 8, 10).
Reading	Multiple choices	Read three texts: a drug label, a local place, and cultural differences.	Read three texts: a drug label, a local place, and cultural differences.	3 (understanding level: items 11, 14, 15), (Applying level: items 12, 16, 17, 20), (Analyzing level: 13, 14, 16), (Creating level: item 19).	3 (understanding level: items 11, 15, 17, 18), (Applying level: items 12, 20), (Analyzing level: 13, 14, 16), (Creating level: item 19).
	10 items (15 minutes).				

English Achievement Test Specification (continued)

Tests	Formats	Tasks		Course learning outcomes	
		Pretest	Posttest	Pretest	Posttest
Writing	Write a paragraph at least 100 words (30 minutes)	Describe one memorable event in high school.	Describe one memorable event in childhood.	2.4, 3	2.4, 3
Speaking	Responded to two prompts (10 minutes).	Talk about favorite places in Korat.	Talk about favorite places in Nakhon Ratchasima Rajabhat University.	2.2, 2.4, 3	2.2, 2.4, 3
		Talk about ways to be healthy.	Talk about ways to relax.	2.4, 3	2.4, 3

**Appendix E: Sample of English Achievement Test: Pretest for Students with
Hearing Impairment**

Name..... Student ID.....

Pretest

English learning achievement test

For students with hearing impairment

The test consists of 4 sections:

Section 1: Listening test 10 items

Section 2: Reading test 10 items

Section 3: Writing test 1 topic

Section 4: Speaking test 2 tasks

Total time 105 minutes

Section 1: Listening test (10 points)

Instruction:

In this part, you will read to four audio scripts. Then choose the appropriate answers by marking the letter (A), (B), (C), or (D) on your answer sheet. There are ten questions altogether.

Part 1: Questions 1-3

Woman: Oh, hi Dave. Long time, no see!

Man: Hi Maria. I was in the neighborhood, so I thought I'd drop by.

Woman: Come on in. [Thanks]. Would you like anything to drink? I have Sprite or orange juice.

Dave: Sprite would be fine.

1. Why did the man come to the woman's house? (**Understanding**)

A. They were going to have dinner together.

B. He wanted to drop off something for her.

C. He passed by and wanted to pay a visit.

D. They were going to study together.

2. What can we imply about the relationship between the two speakers? (**Analyzing**)

A. They were neighbors.

B. They were friends.

C. They went to college together.

D. They were a couple.

3. What does the man prefer to drink? (**Understanding**)

A. Water

B. Coffee

C. Sprite

D. Orange juice

Part 2: Questions 4-6

Man: So, how have you been?

Woman: Oh, not bad. And you?

Man: Oh, I'm doing okay, but school has been really hectic these days, and I haven't had time to relax.

Woman: Well, what do you want to do once you graduate?

Man: Uh... I haven't decided for sure, but I think I'd like to work for a hotel or travel agency in this area. How about you?

Woman: Well, when I first started college, I wanted to major in French, but I realized I might have a hard time finding a job using the language, so I changed majors to computer science.

4. How does the man feel? **(Analyzing)**

- A. He feels worried.
- B. He is feeling well.
- C. He feels relaxed.

D. He needs a break.

5. What is the man doing now? **(Understanding)**

- A. He is a student.**
- B. He is working in the area.
- C. He is looking for a job.
- D. He is graduating.

6. What did the woman think about French language when she was studying?

(Analyzing)

- A. She enjoyed studying in French major.
- B. Not many people studied French in her college.

C. It would be difficult to get a job if she studied French.

- D. French major was not as popular as computer science.

Part 3: Questions 7-8

- Man: So, do you have a part-time job to support yourself through school?
- Woman: Well, fortunately for me, I received a four-year academic scholarship that pays for all of my tuition and books.
- Man: Wow. That's great.
- Woman: How about you? Are you working your way through school?
- Man: Yeah. I work three times a week at a restaurant near campus.
- Woman: Oh. What do you do there?
- Man: I'm a cook.
- Woman: How do you like your job?
- Man: It's okay. The other workers are friendly, and the pay isn't bad.

7. Why did the woman NOT do a part-time job while studying? (**Understanding**)

- A. She is rich.
- B. Her parents paid for it.
- C. She received a grant.**
- D. She could not find a part-time job.

8. What does the man feel about his part-time job? (**Analyzing**)

- A. His co-workers are lazy.
- B. His job is very boring.
- C. He is satisfied with the pay.**
- D. He has a lot of things to do.

Part 4: Questions 9-10

Okay, Okay, let's begin. Hello, everyone. My name's Karl Roberts, and I'll be your teacher for this class. This class meets on Tuesdays and Thursdays from 3:15 to 4:50. We will be meeting in this room for the first half of the course, but we will be using the research lab every other week on Thursday in room 405 during the last two months of the class. Unfortunately, the books haven't come in yet, but I was told that you should be able to buy them at the bookstore the day after tomorrow.

9. What do students have to study at the last two month of the course?

(Understanding)

A. Do a research lab

- B. Do a role-play
- C. Do exercise
- D. Do online self-study

10. If today is Tuesday, when should the textbook be available in the bookstore?

(Analyzing)

A. Today after class

B. On Wednesday

C. On Thursday

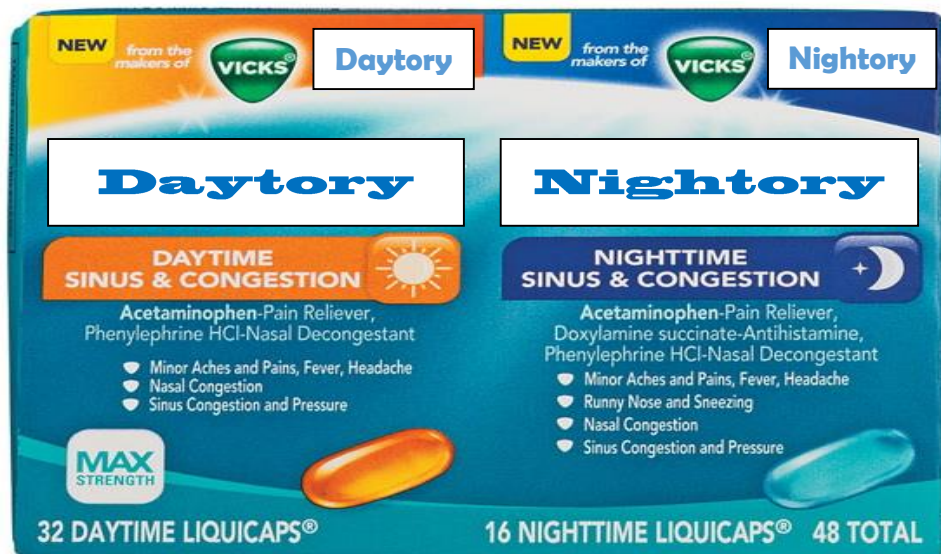
D. On Friday

Section 2: Reading test (10 points)

Instruction:

Read texts 1-3 and choose the correct answer by marking a cross (X) in the letter (A), (B), (C), or (D) on your answer sheet provided.

Text 1 (Question 11-13)



11. What is this product? (**Understanding**)

A. Candies

B. Pills

C. Vitamins

D. Lozenges

12. Who may use this product? (**Applying**)

A. A child who cut his finger.

B. A man who got eye sore.

C. A woman who got a backache.

D. A man who got a rash.

13. What would you need to advise people who is taking this product? (**Analyzing**)

A: You should not take it when driving.

B: You don't feel asleep if taking it at daytime.

C. It helps reduce suffer from major accidents.

D. You can take two pills during the daytime.

Text 2 (Question 14-16)

Nate: What do you do when you go to a Japanese public bath?

Phil: First, you take off your shoes before you enter. Then, you pay an entrance fee to the man or woman at the front counter. Next, you get undressed in the dressing room. And I was very surprised and a little **embarrassed** to see that the woman who took my money was sitting on a platform where she had a clear view of the men's side of the dressing room.

Nate: Do you wear a bathing suit or something?

Phil: Oh no! You don't wear anything.

Nate: Do you actually share the bath with other people?

Phil: Yeah. Traditionally, the public bath people an opportunity to socialize while bathing.

Nate: Huh. Interesting.

14. What surprised Phil when he went to the Japanese public bath? (**Understanding**)

- A. the entrance fee was expensive.
- B. people sit down when they bath.

C. people at the entrance could see him undressing.

- D. he needs to take off his shoes before enter

15. What does the word **embarrassed** mean? (**Understanding**)

- A. Noisy

B. Shy

- C. Worried

- D. Confident

16. How would you infer from this conversation? (**Analyzing**)

- A. The Japanese aren't shy.
- B. The Japanese like taking a bath.
- C. The Japanese don't like taking a bath at home.

D. The Japanese like meeting new people.

Text 3 (Question 17-20)

Khao Yai National Park covers an area of 2,168 square kilometers in the Phanom Dong Rak mountain range, stretches over 4 provinces including Nakhon Ratchasima, NakhonNayok, Saraburi, and Prachin Buri. Khao Yai became Thailand's first national park on 18th September 1962 and is also originally recognized as the National Park Heritage of Asian Group Countries.

However, Khao Yai National Park has faced some problems. The first problem is the illegal logging of Siamese rosewood. There were also the problems of expansion of Highway No. 304, which runs through Khao Yai National Parks. In addition, it will be a dam project at Huay Satong. The dam would cover more than 4,000 rai that would solve the problems of drought and flooding.

17. How long has Khao Yai become a national park? (**Applying**)

A. One century

B. Around five decades

C. Almost a hundred years

D. Unknown time

18. What will happen if the dam is built in Huay Satong? (**Creating**)

A. A lot of trees will be cut down.

B. There will be no more drought.

C. There will be more floods in the area.

D. Local people won't have water supply.

19. What can be inferred about Khao Yai from this text? (**Analyzing**)

A. Khao Yai National Park is in danger.

B. We should build a dam in Khao Yai to store water.

C. More staff is needed to watch over the park from illegal loggers.

D. We need a better highway to Khao Yai.

20. What is the main idea of this passage? (**Applying**)

A. We need to be aware of problems of Khao Yai National Park.

B. Khao Yai is the very big national park.

C. Khao Yai is the first Thailand's national park.

D. We need to grow more trees at Khao Yai National Park.

Section 3: Writing (10 points)

Instruction:

Write a paragraph of at least 100 words. Describe one memorable event in your high school. Explain why it is a memorial event for you.

Section 4: Speaking test (10 points)**Instruction:**

In this part of the test, you will respond to two prompts. Read the prompt carefully and answer each prompt.

Prompt 1:

Have you been to places in Korat? What is your favorite place in Korat? What do you like about the place?

Prompt 2:

Studying at a university is quite different from high school. Please tell me what you or other university students can do to keep healthy.

Good luck

Appendix F: Speaking Rubric

Criteria	3	2	1	0
Task	Student responds appropriately to all questions.	Student responds appropriately to most questions.	Student could not respond appropriately to most questions.	There is not enough information to assess.
Fluency	Student speaks with little hesitation that does not interfere with communication.	Student speaks with some hesitation but it does not interfere with communication.	Student hesitates too often with speaking, which interferes with communication.	There is not enough information to assess.
Grammar	Student is able to use a variety of structures with only occasional grammatical errors.	Student is able to use a variety of grammar structures, but makes some errors.	Student is able to use basic structures and makes frequent errors.	There is not enough information to assess.
Word use	Student uses a variety of vocabulary and expressions.	Student uses a variety of vocabulary and expressions, but makes some errors in word choices.	Student uses limited vocabulary and expressions.	There is not enough information to assess.

Note. Adapted from Brown (2004) and , Pearson Longman (2005).

Appendix G: Writing Rubric

Criteria	3	2	1	0
Topic sentence	Topic sentence is clear and introduces the topic and main idea of the paragraph.	Topic sentence is unclear but adequately introduces the topic and the main idea of the paragraph.	Topic sentence is unclear but somewhat introduces the topic and the main idea of the paragraph.	There is not enough information to assess.
Supporting details	Supporting details are relevant and strong.	Supporting details are relevant and adequate.	Supporting details are relevant but not adequate.	There is not enough information to assess.
Organization of ideas	Ideas flow in the paragraph and clearly support the main idea, creating meaning.	Ideas in the paragraph support the main idea, but could be organized more clearly to create meaning.	Ideas in the paragraph are disorganized, causing a confusion of meaning.	There is not enough information to assess.
Word use	All words are used in appropriate contexts.	A few words are not used in appropriate contexts, but not enough to interfere with the reading.	Most words are not used in appropriate contexts and interfere with the reading.	There is not enough information to assess.
Grammar	There are a few grammatical errors, but not enough to interfere with the reading.	There are some grammatical errors that slow down the reading.	There are many grammatical errors that interfere with the reading.	There is not enough information to assess.

Note. Adapted from Brown (2005) and Glencoe McGraw-Hill (n.d.)

Appendix H: Scores of English Achievement Test

Student	Total	
	Pre	Post
H1	20	28
H2	8	38
H3	22	28
H4	15	19
H5	14	19
H6	35	38
H7	7	15
H8	21	26
H9	11	18
H10	18	23
H11	14	10
H12	19	35
H13	14	17
H14	18	32
H15	16	26
H16	4	17
H17	10	10
H18	10	15
H19	47	53
H20	7	23
H21	12	15
H22	29	32
H23	18	25
H24	17	22
H25	20	16
H26	11	33
H27	22	28

The Scores of English Achievement Test (continued)

Student	Total	
	Pre	Post
H28	11	19
H29	9	15
H30	13	15
H31	26	36
H32	9	15
H33	18	23
H34	21	24
H35	22	20
H36	18	25
H37	12	15
H38	20	14
H39	28	37
H40	18	28
H41	16	17
H42	10	19
H43	9	17
H44	15	10
H45	23	24
H46	18	28
H47	14	26
H48	7	5
H49	33	32
H50	9	24
HI1	10	22
HI2	6	22
HI3	12	26
HI4	8	14

H = Hearing students HI = Students with hearing impairment

VITA

Samorn Suthipiyapathra started her teaching career as a university lecturer at Nakhon Ratchasima Rajabhat University in 2009. She graduated doctoral degree in English as an International Language (EIL) program, Chulalongkorn University. She is interested in English language learning in inclusive English classrooms, especially English language learning for students with hearing impairment.

