

國立政治大學英國語文學系碩士在職專班碩士論文

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差異化教學對國中生文法學習之效益

The Effects of Differentiated Instruction on English Grammar Learning
of Junior High School Students



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中華民國 104 年 7 月

July, 2015

The Effects of Differentiated Instruction on English Grammar Learning
of Junior High School Students

A Master Thesis

Presented to

Department of English,
National Chengchi University

In Partial Fulfillment

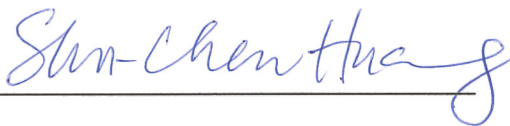
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Master of Arts

by

Yi-Lun Lee

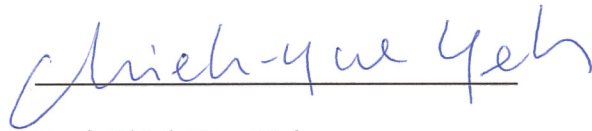
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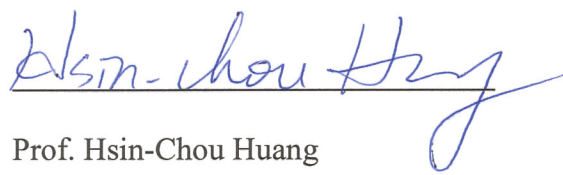
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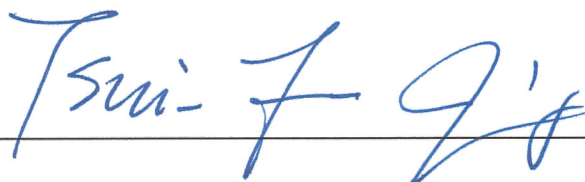
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ACKNOWLEDGEMENTS

First and foremost, I would like to express my best appreciation to my advisor, Dr. Shu-Chen Huang, for all her continuous guidance and advice during my years as a graduate student at NCCU. She always kindly encouraged me to involve in serious thinking and advised me to revise my weakness in research, which enable me to reflect on myself with a different eye.

In addition, I would also like to show my gratitude to Dr. Chieh-Yue Yeh and Dr. Hsin-Chou Huang, the committee members of my oral defense. Their insightful questions, comments and suggestions have improved the quality of my thesis.

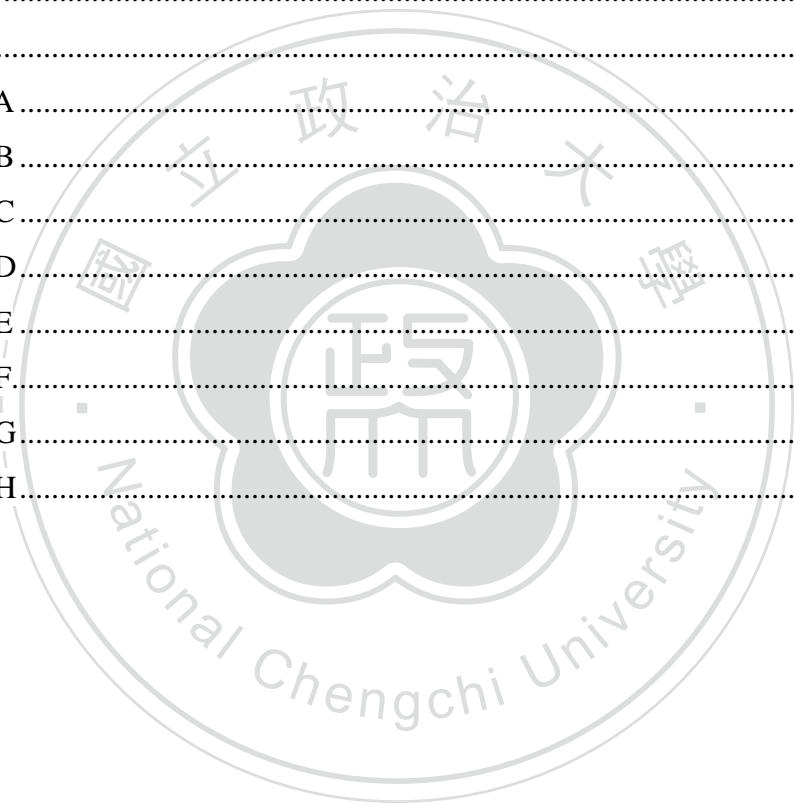
I am also grateful to all the professors who taught me during my graduate school years at NCCU. These summer days at NCCU were wonderful memories for me. Special thanks to my dear friends and classmates for their support and encouragement. In particular, I want to thank Joyce Yang and Daisy Peng for those toughest days in my graduate program. Moreover, I want to thank my old friends, Mimi Hou, Lenny Su and Amigo Hsu for accompanying me and listening to my problem. I am fortunate to have them around. I also thank all the participants, my dearest students of this study. This thesis could not have been completed without their special contributions.

Finally, I owe an enormous debt to my family and my husband, Vince Tsai. I am grateful for their love and spiritual support during my life.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	iii
中文摘要.....	viii
ABSTRACT.....	x
CHAPTER 1	1
1.1 Background of the Study	1
1.2 Statement of the Problem.....	2
1.3 Purpose of the Study	4
1.4 Significance of the Study	5
1.5 Definition of Terms	5
CHAPTER 2	7
2.1 Differentiated Instruction.....	7
2.1.1 Differentiated Strategies	9
2.1.2 Tiered Task	9
2.2 Empirical Evidence of Differentiated Instruction in L1 Contexts	10
2.3 Studies on Differentiated Instruction in Taiwan	21
2.4 Grammar Education in Taiwan	24
2.5 Summary.....	25
CHAPTER 3	27
3.1 The Context of the Problem.....	27
3.2 Participants.....	27
3.3 Instruments.....	29
3.3.1 The Pretest and the Posttest	30
3.3.2 The Han-Lin <i>iEnglish</i> Book 1.....	36
3.3.3 Tiered Task--the Three Differentiated Worksheets	37
3.3.4 Focus Group Interview	38
3.4 Design and Procedures.....	39
3.5 Data Analysis	43
CHAPTER 4	45
4.1 Comparisons of the Participants' Performance in the Pretest and Posttest	45
4.2 HPL Performance in the Pretest and Posttest.....	47
4.3 IPL Performance in the Pretest and Posttest	49
4.4 LPL Performance in the Pretest and Posttest	51

4.5	Data from the Focus Group Interview after the Differentiated Instruction	52
4.6	Summary of Results	56
CHAPTER 5		59
5.1	Discussion	59
5.1.1	Tiered Task	61
5.1.2	Flexible Grouping	62
5.2	Pedagogical Implications	63
5.3	Limitations of the Study	64
5.4	Suggestions for Future Study	64
REFERENCES		65
APPENDICES		72
Appendix A		72
Appendix B		73
Appendix C		76
Appendix D		79
Appendix E		80
Appendix F		81
Appendix G		82
Appendix H		83



LIST OF TABLES

Table 2.1	Empirical Evidence Supporting DI	12
Table 2.2	Empirical Evidence Against DI.....	15
Table 3.1	Comparison of the Average Scores of the Entrance IQ test Between Glass A and Class B (Before the Treatment)	29
Table 3.2	Distribution of the Participants in Three Proficiency Levels.....	29
Table 3.3	Two-way Specification Table of Grammar Points from Starter to Unit 5	34
Table 3.4	Content of 3 Tiered Tasks and Flexible Grouping	41
Table 3.5	The Operation of the Experimental Group and the Control Group	41
Table 3.6	The Procedure of the Main Study	42
Table 4.1	Descriptive Statistics for the Experimental Group and the Control Group	45
Table 4.2	T-test Results of the Pretest Performance	47
Table 4.3	ANCOVA Results of the Posttest.....	47
Table 4.4	Mean Raw Scores and Standard Deviations for HPL	48
Table 4.5	ANCOVA Results for HPL on the Posttest	48
Table 4.6	T-test results for HPL Performances on Each Subsection of the Posttest	49
Table 4.7	Mean Raw Scores and Standard Deviations for IPL.....	49
Table 4.8	ANCOVA Results for IPL on the Posttest.....	50
Table 4.9	T-test Results for IPL Performances on Each Subsection of the Posttest	50
Table 4.10	Mean Raw Scores and Standard Deviations for LPL	51
Table 4.11	ANCOVA Results for LPLs on the Posttest	51
Table 4.12	T-test Results for LPL Performances on Each Subsection of the Posttest	52
Table 4.13	Percentages of the Interviewees Who Liked the Process of DI	53
Table 4.14	Percentages of the Interviewees Who Thought DI Was Helpful.....	54
Table 4.15	Distribution of the Interviewees' Learning Problem	55
Table 4.16	Percentages of the Interviewees Who Thought DI could Solve Their Learning Problem.....	56

LIST OF FIGURES

Figure 1. The user interface of the item pool.....	31
Figure 2. The main structure of the English item pool	31
Figure 3. The presentation of the sentence pattern in Han-Lin iEnglish Book 1.....	37
Figure 4. Bivariate distribution of pretest and posttest for the experimental and control groups	46



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碩士論文摘要

論文名稱：差異化教學對國中生文法學習之效益

指導教授：黃淑真博士

研究生：李宜倫

論文摘要內容：

本研究旨在探討國中英文文法課堂中使用差異化教學之成效，主要的研究目標分別是：(一) 差異化教學是否能提升學生的文法學習成效。(二) 差異化教學在能提升低中高三組學生的文法學習成效上是否有差異。(三) 學生對差異化教學的看法。

本研究採準實驗研究法，教師以差異化教學策略中的階梯式任務和彈性分組法進行文法教學。在暖身階段，教師以全班式教學講授文法重點後，低中高成就學生分別接受不同的階梯式任務和彈性分組法進行練習；低成就學生須以小組形式完成文法選擇題練習，中成就組學生兩人一組完成文法填空題練習，高成就組學生獨立完成文法看圖造句練習。針對七年級學生進行 11 週差異化教學後，使用教師自編文法測驗前後測成績進行獨立樣本 t 檢定和共變數分析，並以焦點團體法瞭解低中高成就三組學生接受差異化教學之後的想法。

研究結果顯示：(一) 接受差異化教學的學生在前後測結果上有顯著性差異 ($p < .05$)；(二) 進一步針對低、中、高成就組學生進行分析，發現除了低分組在文法測驗選擇題中有顯著的學習進步之外，其他兩組與控制組無明顯差異。(三) 高成就組學生對於差異化教學喜好度比中、低成就組學生低；(四) 高成就組學生認為差異化教學材料對他們的幫助程度較低；(五) 低成就組學生反應他們的

學習困難為單字和造句；中成就組學生為單字、造句及口說；高成就組則為閱讀、口說、聽力及文法。低、中成就組學生皆認為差異化教學有助於他們克服學習困難。



ABSTRACT

This current study investigated the effects of integrating differentiated instruction into grammar teaching in junior high school English classes. The main purposes were to explore whether or not differentiated instruction improved the students' grammar achievements in general, whether students, when divided into, low, intermediate and high proficiency levels, respectively benefited from such instruction on grammar learning, and what students' experiences and thoughts were after receiving differentiated grammar instruction.

The participants of this quasi-experimental study were 54 seven graders who received differentiated instruction for a total of eleven weeks. The researcher adopted two differentiated instructional strategies, tiered tasks and flexible grouping, to teach grammar. In the warm-up stage, the instructor taught grammar points in the whole class model. After the instruction, low, intermediate and high proficiency learners received different tiered tasks and flexible grouping respectively to do the grammar exercises. Low proficiency learners (LPL) were required to finish multiple choice exercises in small groups, intermediate proficiency learners (IPL) had to complete fill-in exercises in pairs and high proficiency learners (HPL) did the sentence making exercises with picture cues independently.

Their performance on the pre- and posttest designed by the researcher was analyzed by independent *t*-test and ANCOVA. Their thoughts about experiencing DI were collected through focus group interviews. And the findings of the study were summarized as follows:

1. Students in the experimental group outperformed those in the control group significantly ($p < .05$).
2. When students in the experimental group were divided into three subgroups, only

LPL improved their performance on the multiple choice section, and the other two groups showed no significant differences in comparison to their counterparts in the control group.

3. HPLs' preferences for DI were lower than those of LPL and IPL.
4. The learning difficulties of LPL were vocabulary and sentence-making; of IPL were vocabulary, sentence-making, and speaking, and of HPL were reading, speaking, listening and grammar. Both LPL and IPL thought DI was beneficial for them to overcome the learning difficulties.



CHAPTER 1

INTRODUCTION

This chapter gives an outline of the thesis. It is further divided into five sections. The first section introduces the background of the study. The following section presents the problem. The third section reports the purpose as well as states the research questions that are to be answered in this current study. The fourth section reports the significance of the study. The last section introduces the definition of terms.

1.1 Background of the Study

With the educational reforms in the past decades, the learning materials for students have become more various and attractive, so did the teaching methods of instructors. In the past, most teachers employed lecture method as the main way to deliver the uniform learning content to the whole class, which ignored the truth that students go to school with diverse abilities, backgrounds, preferences, learning styles and personalities. The analogy “One size doesn’t fit all” has been used to describe the difficulty in implementing a standard curriculum to cater to different learners (Gregory & Chapman, 2007). To solve this problem, the idea of “differentiated instruction” was proposed.

The underlying philosophy of differentiated instruction is that teachers value the uniqueness of every student and strive to offer opportunities for them to succeed. According to Tomlinson (2001), the teachers who adopt differentiated instruction consider and design varied approaches to content, process and products in response to student differences in readiness, interests and needs . Differentiated Instruction (DI) has captured many educators’ attention across the US because they try to ensure that all children will make progress to meet the requirements of No Child Left Behind

Legislation (NCLB) (Dahlman, Hoffman, & Brauhn, 2008). President George W. Bush signed NCLB into a law on January 8, 2002. It mandates raising the educational performance by setting higher educational standards, requiring annual testing of children to measure their progress toward achieving the higher standards and providing rewards/penalties to the schools where students make/do not make adequately yearly progress. NCLB has forced schools to pay close attention to their curriculum and the instruction provided by their teachers. Under the circumstances, DI was widely adopted across the US to meet the requirements of NCLB and has proven to be successful in the general education context where researches have shown that students exposed to differentiated instruction strategies consistently outperform the other students (Baumgartner et al., 2003; Dangelo, 2006; Johnson, 2010; King, 2010; McCullough, 2012; Parker, 2011).

1.2 Statement of the Problem

In Taiwan, English is regarded as a foreign language. Under such a condition, classroom teaching is the major and sometimes the only resource that provides students access to English particularly in some remote areas. Thus, formal instruction plays a key role for helping language learners in Taiwan to master the target language.

Communicative Language Teaching (CLT) approach has been promoted in English classes in junior high schools in Taiwan since the English curriculum reform of 2001. Contrasted with the traditional English teaching approaches which focus on learners' knowledge of grammatical rules, CLT emphasizes on cultivating students' ability of using language appropriately and naturally. With the rise of CLT, the role of grammar instruction in second language acquisition was downplayed.

However, according to Nassaji (2000), recent studies have indicated the importance of formal instruction for learners to acquire higher accuracy. Ellis (2002)

also argued that formal instruction is effective in developing explicit knowledge of grammatical features which lead to higher levels of grammatical knowledge. Harvey (1985) proposed that understanding the grammatical system of a language is extremely essential for some learners, often especially for speakers of different languages. In Taiwan, grammar learning was found to be one of the English academic adjustment problem for the first-graders in junior high school (Tseng, 2008). Although students received formal English instruction from schools in their elementary stage, they were not asked to memorize or apply grammar rules in these classes. However, in junior high English classes, grammar played a more crucial part. Students had to learn specific rules in each lesson; there was usually a section called "grammar choice" on exams and grammar rules were often adapted into the items of cloze tests. In order words, grammar learning has become required and demanding to junior high school students. Thus, grammar instruction has been a challenging task to many English teachers as well as the researcher of this present study.

Furthermore, another serious problem that English teachers encounter is the bipolar distribution of students' performance. According to Chang (2006), the low achievers' average scores on Basic Competence Test (BCT) was 15, which was merely one fourth of the total score and BCT is a standardized exam for enrollment in high or vocational schools student in Taiwan. It meant that more and more junior high school students gave up learning English grammar at this stage. The latest result of Comprehensive Assessment Program (CAP) for junior high school students, which took the place of BCT in 2014, also showed the similar consequence. The bipolar distribution of students' English performance still exhibited and 33.20% of the test takers got Grade C which meant nearly 1/3 junior high graduates need English remedial instruction.

Rural-Urban gap, socio-economic status, learning resources, the numbers of qualified teachers and students' motivation and interests may be the explanation for the situation. The linkage between elementary school phase and junior high school phase could be another possible cause of students' maladjustment in their English learning. Grade 7 students are not total beginners of English and their previous learning experiences need to be considered when planning new curriculum for them.

1.3 Purpose of the Study

While a substantial body of research currently exists, based on the successes and failures of DI programs as a whole, relatively little research has been conducted to determine whether a differentiated instruction design for grammar learning, such as tiered task and flexible grouping, would be a viable and effective solution.

In short, the present study had three specific purposes. The first one was to examine the effects of employing DI in grammar learning on junior high school students' learning outcomes. The second one was to investigate whether DI was helpful for the students with different language proficiency. The last one was to explore the participants' perception towards DI.

Specific research questions are as follows:

1. Were both “differentiated instruction” and “non-differentiated instruction” equally beneficial for students on their grammar learning?
2. Did high-, intermediate- and low proficiency learners benefit to different extent from "differentiated instruction" and "non-differentiated instruction" respectively?
3. What were the learners’ opinions after they had experienced differentiated instruction?

1.4 Significance of the Study

It is hoped that this study can contribute to the understanding of the relationship between DI and junior high students' grammar learning. Rather than debating the pros and cons of incorporating DI into grammar learning in an EFL classroom, this study has shown that one EFL teacher's attempts to implement the appropriate aspects of various differentiated strategies into the grammar learning process, and then gradually and incrementally assess what worked and what did not. In addition, it is hoped that insights can be gained by investigating the effects of DI on different proficiency learners; from this educators could better design grammar lessons through DI. Meanwhile, it is hoped that this study can encourage more studies and more practitioners to explore the possibilities of DI and provide practical examples as reference materials for teaching grammar in junior high schools.

1.5 Definition of Terms

The following terms were used in the current study. Operational definitions were incorporated to provide clear and concise understanding for readers.

differentiated instruction: Defined as the process whereby the teachers understand the entire spectrum of the learning process to facilitate the needs of the wide range of learners in the classroom. As a result, the student's possibility for academic growth and success will increase during the learning process (Tomlinson & Eidson, 2003).

No Child Left Behind Legislation (NCLB): The NCLB Act, initially authorized in 1965 as the Elementary and Secondary Education Act (ESEA), was signed into law on January 8, 2002 as a means of holding states, school districts and schools more accountable for improving the academic performance of each student regardless of economic status, race, ethnicity, proficiency in English or disability (King, 2010).

tiered task: Tiered task allowed the same objective to be obtained at various levels and modalities. The teachers created tasks that appealed to the multiple intelligences ranging from simple to complex (Danzi, Reul, & Smith, 2008).

flexible grouping: It acknowledges that all grouping patterns like large groups, small groups, teams, partners, and individuals are valuable because they all offer the learners slightly different experiences with different outcomes. The basis of the grouping may be students' interests or needs (Ford, 2005)



CHAPTER 2

LITERATURE REVIEW

In this chapter, the major issues associated with differentiated instruction are reviewed to set up a theoretical framework for the present study. First, the basic concepts regarding differentiated instruction were elaborated. The second section provided empirical evidence of differentiated instruction. After that, differentiated instruction in the local context in Taiwan was specifically introduced. The final part briefly summarizes the current situation of grammar instruction in junior high school, where this present DI study was implemented.

2.1 Differentiated Instruction

The importance of differentiating education for students with different learning capabilities and requirements has been addressed for many years. Since early 1980s, the advocators of inclusive education proposed to modify curriculum and instruction to meet students' diverse learning needs in the classroom (Hoover, 2004). Even though the terminology for such concept varied from modification or adoption to differentiation, the underlying essence is that teachers have to recognize each student's needs, readiness, preferences and interests in order to plan strategically to foster success for all students. Differentiation is a two-step process which (1) analyzes the degree of the content in instructional planning and (2) modifies, adapts or designs new approaches to meets students needs, interests and learning preferences (Heacox, 2012).

Tomlinson and Eidson (2003) described differentiated instruction as "a systematic approach to planning curriculum and instruction for academically diverse learners." However, differentiation should not be considered as individualized learning plans for each student which may overwhelm teachers. Baecher, Artigliere,

Patterson, and Spatzer (2012) suggested differentiation should be viewed as variation on a theme, beginning with a simple project, task or learning goal.

The variation mainly consists of four important elements: (a) content, (b) process, (c) product, and (d) learning environment (Tomlinson, 2001). When planning to differentiate content to be learned, Tomlinson (1999) suggests that a teacher should make decisions about the essential content, principles and skills which all learners will master and at the same time provide opportunities for advanced students to work on more complicated concepts or problems as well as for slower learners to focus on the very basics. Some examples of ways to differentiate content include: using picture books or chapter books at various reading levels, presenting information through both whole group and small group approaches, re-teaching the students who may not have mastered the skill, using a variety of reading grouping to support and challenge students, and using various types of books, computer software, books on tape and videos as ways of enhancing individual student learning (Tomlinson & Allan, 2000, p. 8).

As for process which is known as the "activity", it includes how teachers teach and how students learn. Teachers must provide the activities that address different student abilities, learning styles and interests. Teachers have to adjust their teaching to reflect the needs of the students by finding where the students are when they come into the classroom and build on their previous knowledge to proceed (Levy, 2008). Drapeau (2004) also indicated teachers can create activities that support students preference and strengths for learning while designing assignments that provided remedies for students' weaknesses.

Products, according to Hall, Strangman, and Meyer (2003), are the initial and on-going assessment of student readiness and growth. Assessments can be formal or

informal, including interviews, surveys, performance assessments and more formal evaluation procedures. Tomlinson (2001) added, product assignments should aid students who work individually, or in groups, rethink, use, and extend what they have learned over a long period of time. Meanwhile, a well-designed product for students allows various expression and alternative choices which offers varied degrees of difficulty, types of evaluation and scoring.

The last component of DI is the learning environment. Smutny and Fremd (2009) mentioned DI emphasizes the learning environment as a medium for learning, and is responsive to the distinctive needs of the individual students.

2.1.1 Differentiated Strategies

Tomlinson (1999) proposed an organizer for thinking about DI (see Appendix A). The first three components--content, process and product--can be differentiated according to students' readiness, interests or learning profiles through a range of instructional and management strategies. The strategies developed based on students' readiness include tiered tasks, compacting, think-aloud, highlighted text, small group instruction and so on. These strategies are recognized to be effective by English language experts such as Echevarría, Vogt, and Short (2008).

2.1.2 Tiered Task

Tiered task is a differentiated instructional strategy in which all students receive the same content and objective; however the process and the product vary because students have different readiness levels. Adams and Pierce (2006) mentioned that when a teacher tiers lessons based on the readiness of students, this implies that the teacher understands the needs of the students and the tiers are designed to meet those specific needs. Tiered tasks focus on several levels of instructional interventions that are based on the gaps in student skills (Stuart & Rinaldi, 2009). Lessons are designed

according to instructional levels of complexity, abstractness, and open-endedness. According to Tomlinson (1999), when students have opportunities to complete assignments at different degrees of complexity, this maximizes the possibility that all students acquire essential skills and understanding, and they are properly challenged.

Tiered task typically presents three levels which graduate in depth and complexity and offers opportunities for students to actively learn the same concept (Benjamin, 2014). The top tier gives the most support and the least freedom for error which is a good task for weaker learners. The middle tier is for intermediate learners. The bottom tier provides the least support and the most freedom to experiment for stronger learners (Richards & Renandya, 2002).

2.2 Empirical Evidence of Differentiated Instruction in L1 Contexts

Many researchers have carried out studies to explore the effectiveness of DI. This section of literature review mainly examined the keyword "differentiated instruction" in Digital Dissertation Consortium to provide supports from empirical studies. Some studies from the search results were not qualified to be reviewed based on two reasons: a) case studies or b) focused on curriculum reforms which were not directly related to the theme of the current study. Thus, twelve empirical studies which applied DI were chosen to be reviewed in this section. Some of the study results supported the effect of DI but some did not. These two categories of empirical evidence are summarized in Table 2.1 and 2.2 respectively and will be discussed in more detail later in this section. Generally speaking, there are two main ways of incorporating DI as the treatment in this type of study. First, DI was employed for narrowing down the students' academic achievement gap or specifically for solving their reading problems. Secondly, the focus was placed on realizing teachers' perceptions which affected their decisions on whether to utilize DI in their classrooms

or not.

Not only the ways of incorporating DI differed, researchers administered diversified methods to collect data while they aimed at understanding different functions of DI. All the researchers analyzed their data using a quantitative approach when they were dealing with the effects of DI. A few researchers, however, designed both quantitative and qualitative methods to answer their research questions.

Quantitative approaches involved analyzing data gathered from students' test results and questionnaires. On the other hand, with qualitative approach, data collected from teachers' surveys, interviews, or focus groups of teachers or students, were classified and interpreted, from which teacher and learner their attitudes toward DI was shown.

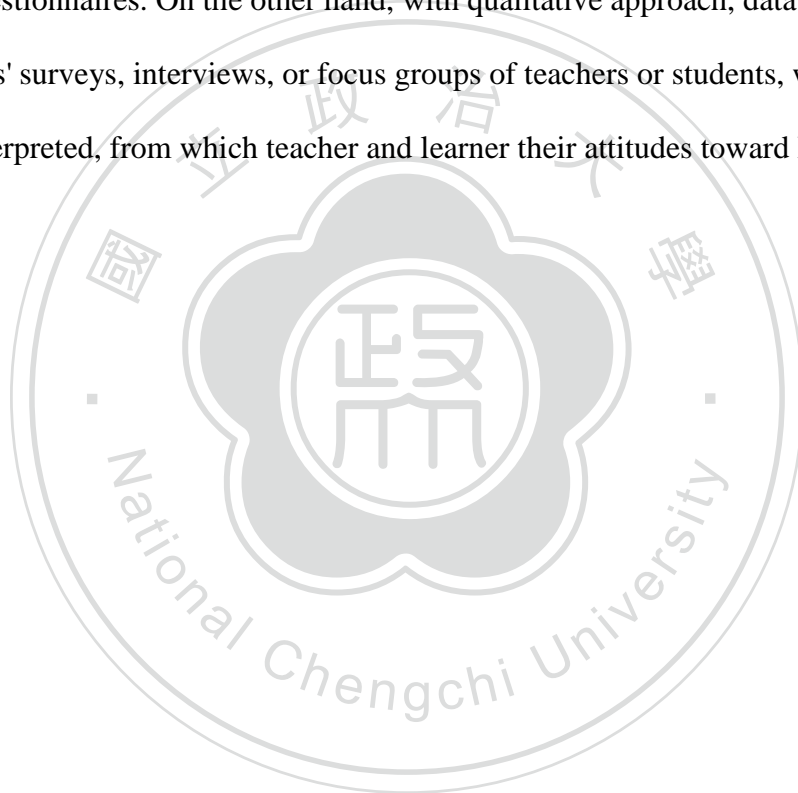


Table 2.1

Empirical Evidence Supporting DI

Researchers	Research contexts	Participants	Issues	Data analysis
Baumgartner et al. (2003)	non-specified	primary and middle school students in two communities in northern Illinois	increasing reading achievement of primary and middle school students	quantitative (tests, questionnaires)
Dangelo (2006)	reading comprehension abilities: a) independent reading abilities, b) instructional reading	118 fourth graders	effects on reading in the urban elementary school setting	quantitative (the Burns & Roe Informal Reading Inventory)

	abilities, and c) frustration reading levels			
King (2010)	grade 9-12 teachers from regular and special education in Tennessee	220 surveys from 10 high schools teachers	factors associated with teachers' implementation of DI	quantitative (questionnaires)
Johnson (2010)	non-specified	60 seventh and eighth graders: 30 in the experimental and 30 in the control group	improving students academic achievement	quantitative (tests) qualitative (a survey, interview ,weekly meetings)

Parker (2011)	ESL / English Language Learners	one classroom from grade 3, one classroom from grade 4 or 5, two volunteered teachers	closing the achievement gap for elementary English language learners	quantitative (tests, the teacher professional self- assessment survey, DI best practice checklist) qualitative (focus group)
McCullough (2012)	vocabulary and reading comprehension	98 second grade student	effects of DI on academic achievement for struggling second grade readers	quantitative (tests)

Table 2.2

Empirical Evidence Against DI

Researcher	Research contexts	Participants	Issues	Data analysis
Burns (2005)	non-specified	91 volunteered teachers from middle and high schools	effects of DI on curriculum content and student achievement	quantitative (questionnaire)
Graham (2009)	literature, science and math	about 1000 students and 120 teachers did online surveys, 12 faculty members accepted an individual interview, 20 students joined a focus group	mandated implementation of DI effects examined	quantitative (tests) qualitative (interview, surveys, focus group)
Hartnell (2011)	a course called American Government	187 students from grade 9,10, 11&12	effects of DI on content mastery and test scores	quantitative (tests)

Cummings (2011)	reading comprehension includes recalling details, story elements, fact and opinion and author's purpose	50 fourth graders	effects of DI on reading achievement of selected fourth graders	quantitative (tests)
Smit and Humpert (2012)	mathematics and German	162 teachers, 1180 students	teachers' practice of DI, effects of DI on students' achievement	quantitative (tests, questionnaires)
Alavinia and Sadeghi (2013)	vocabulary	47 EFL freshmen	effects of DI on EFL learners' proficiency gains	quantitative (tests)

The impacts of employing DI have been studied over the past decade and the results were summarized chronologically in Table 2.1 and Table 2.2 and were discussed as below.

Baumgartner et al. (2003) conducted an action research to improve primary and middle school students' reading achievement. It was found the DI strategies such as flexible grouping, student choice on a variety of tasks, increased self-selected reading time, and access to a variety of reading materials are effective on improvement of student achievement and attitude.

Dangelo (2006) also tried to find out the impact of DI on elementary students' reading comprehension. In order to determine the effective classroom methodology for reading comprehension acquisition, the researcher developed three instructional treatments for three groups of students. In the first treatment, students were taught as a single large group. The second treatment featured a fully differentiated setting known as ability grouping. The third was a flexible group model in which the classrooms were structured to have a portion of the period as a whole group instruction and another portion as an ability-grouping model. It was worth noting that the result revealed that there was a significant difference in gains for students in a flexible differentiated method of reading instruction when compared with traditional ability grouping instruction.

McCullough (2012) also investigated the effect of DI but focused on improving struggling 2nd graders' vocabulary and reading comprehension. The experimental group received three differentiated instructional strategies: read-aloud, small-flexible grouping, and tiered assignments as the treatment for a period of 30 minutes 4 days per week during the years 2009 and 2010. The research data showed positive gains in students' vocabulary and reading comprehension performance after the

implementation of DI. The finding of this study revealed that when DI was effectively and appropriately implemented, it can assist in resolving reading problems for struggling readers.

Even though the three studies reviewed above adopted different DI strategies as the intervention, they all provided evidence that DI was effective in improving students' reading comprehension. However, the result of another study, that of Cummings' (2011), illustrated a somewhat different scenario. The researcher focused on exploring the impact of DI on the reading achievement for the fourth graders. The reading performance of the experimental group and the control group was collected by a standardized test named Georgia CRCT Coach pretest and posttest for reading. By comparing the changes in students' pretest and posttest scores between the two groups, the results of this study indicated no differences in CRCT reading performance were detected. The current study failed to provide the evidence that DI could contribute significant academic gains on reading, so the researcher recommended future research might be conducted in a middle school or a high school setting or other academic areas like science or math for better indication of student academic performance.

The similar result was shown in Burns' (2005) study as well. Burns found that the implementation of DI in middle school seemed to indicate a negative effect on student achievement as well. There were three items in the achievement test: Language Arts Literacy, Science and Mathematics. The pretest results divided students into three categories: partially proficient, proficient, and advanced. By analyzing the posttest data after two-year-intervention of DI, the result suggested only the number of lower achieving students increased in the area of Language Arts Literacy and Science, the rest of the students showed no improvement and the

advanced students even scored less. Although the result was beyond the researcher's expectation, he claimed the drop couldn't be directly attributed to the implementation of DI because there was no counterpart receiving non-DI in this study to be compared with.

Like Burns, Hartnell (2011) also examined the effect of DI on assessments at the end of a course. He found the subjects who accepted DI and standard-based curriculum for 18 weeks did not perform better than those who received traditional instruction. However, his study didn't examine DI and the adoption of standard-based curriculum separately to find out which variable specifically failed to yield higher scores. With this variable, it was hard to come to a conclusion that DI was not helpful for students to improve their learning.

With utilizing DI differently, researchers analyzed the benefits of DI from different aspects. For example, Graham (2009) addressed the effectiveness of DI as well as differences in achievement between high schools that mandated the use of DI and the other one that did not. After comparing the passing rates of students prior to and after the implementation of DI for the core subjects of Math, Science and Literature on a test called Georgia End-of-Course Test, it revealed that there was a lack of significant difference between the passing rates between the two schools. Graham offered one explanation for the result that teachers in the control group could be differentiating the curriculum as well although not mandated to do so.

Johnson (2010) also intended to probe the application of DI as a means of closing the achievement gap in Chicago Public School System because the gap that existed between the minority and low-income students and their White and Asian counterparts seemed to be widening. Although the result was not significantly different in the achievement tests between students who were taught using DI and

those who were taught in a traditional way, the researcher thought DI had a direct impact on student growth. Because of the actual practices of DI strategies based on each student's learning style, teachers could effectively teach to a variety of learning styles, causing academic growth.

Alavinia and Sadeghi (2013) also probed the potential effect of DI via recognizing the learning styles of students. The subjects were assigned to be visual learners, auditory learners and kinesthetic learners based on a learning styles self-assessment questionnaire before the treatment. The treatment for the learners in the experimental group was given based on DI through tailoring the input presentation mode while the control group received instruction without exerting any differentiation based on the students' varied learning styles. The findings obtained by comparing TOFEL scores of each group revealed no significant difference existed between the experimental group and the control group. Furthermore, the subjects in the experimental group didn't statistically perform better compared with their pretest scores after the intervention of DI.

DI could be employed to help improve teaching culture in small schools facing demographic declines. Smit and Humpert (2012) conducted a research in the rural areas of Switzerland which suffered from dwindling student numbers. The decreasing population led to mixed-age classes and the heterogeneity of the learners required a heightened emphasis. They employed DI to improve the teaching situation but found DI showed no significant effect on either mathematics or their mother tongue of German. One possible reason for the result may be that the standardized tests "the Klassencockpit" which the study administered were not directly related to the actual lessons being taught using DI strategies. Therefore, the researcher suggested the best research design to test for the effects of DI is an experimental design with a control

group.

Parker (2011) tried to develop an understanding of the relationship between differentiated instructional strategies and the literacy achievement of elementary English language learners. By comparing student literacy achievement prior to the intervention with the post achievement status, it showed a significant impact of DI on the literacy performance of elementary English language learners. Besides, the teacher interviewees who had been trained in DI and were knowledgeable about the process still expressed a need for further staff development as it related to evaluating English language learners performance.

Instead of exploring the effects of DI on a certain academic subject, King (2010) examined high school teachers' knowledge as well as their perceptions regarding DI. The researcher also wanted to know what factors teachers perceived as barriers when they implemented DI in their classrooms. The findings from the study indicated teacher-student-ratio, time and state standards and assessments were the strongest factors affect teachers' decision for using DI. Consequently, the researcher suggested that teachers need more training to become more knowledgeable and adept in implementing DI.

In the cases reviewed above, it revealed DI was mostly incorporated to solve the academic achievement problem in L1 context.

2.3 Studies on Differentiated Instruction in Taiwan

While there is a scarcity of empirical studies of DI and how it supports student achievement, there are several recent dissertations that have germinated some empirical data. These existing studies discussed the adoption of DI from many aspects. Cheng (2006) examined the effects of DI on EFL learners' motivation, interest and anxiety in the setting of a university freshmen's English reading class. The result

showed that DI significantly increased EFL learners' motivation and interest toward language learning but did not yield a significant decrease in anxiety. The researcher suggested one possible explanation to the result that Taiwanese students were unfamiliar with DI which involves much group work and they had been accustomed to the teacher-directed lecture mode. Thus, they could not relieve their anxiety when they were required to do most of the talking.

Another study aimed at understanding Taiwanese ESL teachers' beliefs about DI. Lee (2007) launched a case study which involved eight volunteered middle school teachers. They were required to compose short essays to answer the predesigned questions about beliefs toward DI after they watched video clips about a target school that implemented DI. By analyzing the content of the essays, the result showed these participants' beliefs about DI conformed to the principles of effective differentiation (Tomlinson et al.,2003) which meant that the participants had considerable understanding of DI. They believed student interest, readiness level, and learning profiles are three critical components of DI. However, the study revealed that the participants tended to differentiate their instruction by identifying students' readiness level rather than students' interest or learning profiles because readiness level had more direct relationship with students' academic performance than the other two.

Kang (2008) conducted a study aimed at exploring the implementation of DI in elementary school settings. He distributed a survey questionnaire to 337 elementary school teachers in Taipei County. By analyzing the questionnaires, Kang found most of the participants had adjusted their teaching content for the heterogeneous learners but the adjustment still did not fully meet students' individual needs. Thus, most participants agreed upon the needs for supportive resources to go on further learning of DI.

In a quite recent study, Chien (2012) also focused on the implementation of DI in elementary school context. She employed three intertwined components of DI: content, process and product to deliver word instruction in an elementary school EFL classroom. In order to know students' readiness, she asked the students to provide different feedback according to their previous knowledge about the vocabulary. For example, students who knew the word and could use it in a sentence were required to color the word green, who know the word but didn't know what it meant were asked to color the word yellow, and who didn't know the word at all had to color the word red.

After checking students' understanding of the vocabulary, Chien differentiated her teaching content by leading the whole class in reading through the words colored green and then using word cards and phonics rules to teach the whole class words marked in yellow and red.

She differentiated the teaching process by offering various tasks as well. First, she had every student make word cards of the vocabulary she just taught. While students were engaged in the task, she gave those students who had marked words in yellow and red additional word instruction by using word cards and phonics rules.

Once students finished making word cards, she tested their learning product based on their proficiency. For beginning-level learners, they were required to point to words for recognition. For advanced students, the researcher not only asked them to recognize and spell words, but also challenge them with new words. The benefit of Chien's integrating DI into EFL lessons was that differentiation makes the instruction more accessible to all students.

There is much documentation of positive effects of differentiated instruction abroad. But the research is not conclusive and there are no studies on differentiation

as a whole model to support its effect in the junior high school setting in Taiwan.

2.4 Grammar Education in Taiwan

In an English as a foreign language (EFL) environment, like Taiwan, grammar instruction has been an indispensable component. Many researchers have conducted studies about this issue and found out that most teachers and students agreed that grammar should be taught in English classes (Wu, 2003). Furthermore, the studies indicated that grammar instruction significantly improved students' English learning (Yang, 2013). However, grammar instruction is challenging for junior high school teachers because the teaching goal and the teaching activity design of English for the secondary school students are rather different from those for the primary school classes (Chang, 2006). In primary school English classes, the teaching goal is to enhance students' learning motivation, to enhance their listening and speaking and to develop their self-learning ability. By contrast, the major teaching goal of the secondary English classes is to help students to deal with the high school entrance exam. Such a gap in teaching goal between primary school and secondary school has caused a devastating impact on the transition of English learning for the secondary students (M. Q. Wu, 2004).

Tseng (2008) studied the academic adjustment problem with learning English for junior high student in Taiwan and found out grammar learning was one of them. According to him, students would attempt to produce their message in English by directly translating a Chinese sentence into English one based on their limited grammar knowledge.

In order to solve the adjustment problem, Li (2012) reviewed the evolution of Taiwan's English education in the past century and proposed the most effective English education requires professional teachers not only with excellent four

skills-listening, speaking, reading, and speaking but also with the concept to address diverse students' needs in an innovative, practical and passionate way. Yang (2013) also heightened the importance of the considerations concerning students' needs and errors' before learning new grammar concepts in her research on improving elementary school students' grammar learning. The current study was to find out the effective way to teach grammar in junior high school based on these suggestions.

2.5 Summary

The aforementioned studies have showed various results of differentiated instruction (DI). There are many studies focused on exploring the effects of DI on helping close the achievement gaps or improving students' performance in some certain subjects especially in reading. According to some researchers, DI has the potential to teach to students' different strengths based on the various DI strategies. However, some researchers questioned the effect of DI because they thought standardized tests could not truly reflect students' progress after the intervention of DI.

Although DI hasn't been adopted to improve students' grammar learning, learning theories that support DI as a way to address the myriad of needs of students were found in second language acquisition (Gusman, 2004). Synthesis of scientific education studies within and outside the U.S. has opened discourse among educators. Reviewing the components of DI and these actions taken by former researchers ensure DI have the potential to help English language learners to improve their learning performance. Gaps do exist in the literature on how differentiated instruction could help learners overcome their learning difficulties in grammar. This deficiency has given credence to the research questions posed for the investigation in this current study.



CHAPTER 3

METHODOLOGY

This quasi-experimental research intends to determine the effects of differentiated instruction on junior high school students' grammar learning. The issue was addressed from three aspects: whether or not the students who received the differentiated instruction improved their test scores, whether both “differentiated instruction” and “non-differentiated instruction” were equally efficient for high, intermediate and low proficiency learners respectively, and what the learners' thoughts of differentiated instruction were.

3.1 The Context of the Problem

The researcher decided to implement DI in the context of grammar teaching in the study. According to Chang's (2006) survey of English language education in Taiwan, there is a bipolar distribution of junior high graduates' English scores on the Basic Competence Test (BCT), not only reflecting the learners' varying degrees of proficiency among different cities but also among towns, and even classrooms. Chang pointed out that the content of English learning, vocabulary and sentence structures in particular, has increased a lot in junior high school phase compared with those in elementary school phase and the slow learners' maladjustment led to the issue of underachievement. Therefore, how to create a learning environment for learners with diverse needs becomes an important concern for junior high school teachers. Based on previous studies, DI has the potential to help teachers attend to learning needs of students at different proficiency levels. Thus in this study of DI, the researcher designed a DI specifically for grammar instruction in junior high school.

3.2 Participants

Two classes of seventh-grade junior high school students in a public school in

northern Taiwan, 54 students in total, were recruited as the participants in this study. The subjects have very similar background. First, they were all native speakers of Mandarin Chinese with an average age of 13. Second, they all studied English for at least four years through formal instruction in elementary school before participating in this study. Third, they were divided into different class groups according to a normal s-type distribution of their performance in an entrance IQ test. Table 3.1 shows that there is no significant difference between the two classes before the treatment, $p > .05$. Therefore, in terms of general intelligence, students are evenly distributed among different groups. Even with the above-mentioned homogeneity, administratively there is no room to assign students randomly into the control and experimental group. This study thus adopted a quasi-experimental design (Creswell, 2011). A quasi-experimental design involves nonrandom assignment of research participants, because the researcher cannot artificially create groups for the experiment. On the other hand, if random assignment was used, it would have disrupted the formal classroom arrangement. Furthermore, quasi-experimental design can utilize a pretest and posttest approach. Creswell outlined the procedure indicating that the researcher assigns two groups: the experimental and control treatments. Both groups are administered a pretest, however, the experimental group receives the treatment given by the researcher. In the end, the researcher administers a posttest to assess the differences between the two groups (Creswell, 2011).

According to the research design, subjects from both the control and experimental group were divided into three subgroups respectively based on their scores of the pretest which was introduced in 3.3.1 later. Those whose average scores ranked at the top 33% of all the subjects were grouped into the "High Proficiency Learners" (hereinafter HPL), while others who ranked from 34% to 67% were the

"Intermediate Proficiency Learners" (hereinafter IPL) and the rest 33% were placed in the "Low Proficiency Learners" (hereinafter LPL) by the researcher.

In addition, the subjects of each subgroup would be 9 if divided evenly. However, the IPL should work in pairs based on the research design of DI. Thus, 8 students were put in the subgroup of HPL and given the codes of H1, H2, H3,H4, H5, H6, H7 and H8, 10 students of IPL with the codes of I1, I2, I3, I4, I5, I6, I7, I8, I9 and I10. The LPL remained 9 because they learned the grammar in a small group rather than pairs and they were given code of L1, L2, L3, L4,L5, L6, L7, L8 and L9. Table 3.2 illustrates the distribution of the subjects

Table 3.1

Comparison of the Average Scores of the Entrance IQ test Between Class A and Class B (Before the Treatment)

	Glass A (n=27)		Class B (n=27)		df	t-Value	p-Value
Item	M	SD	M	SD			
Total	74.96	20.02	74.51	19.34	52	.083	.696

Table 3.2

Distribution of the Participants in Three Proficiency Levels

Group	HPL	IPL	LPL	No. of subjects
Experimental Group	8	10	9	27
Control Group	8	10	9	27

Note: HPL: High Proficiency Learners; IPL: Intermediate Proficiency Learners; LPL: Low Proficiency Learners

3.3 Instruments

To perform the present study, the researcher made use of a couple of instruments

and materials. First, in order to achieve the purposes of the study, the researcher adopted two tests: a pretest and a posttest to collect quantitative data for exploring the effects of DI on junior high EFL students' grammar learning.

Besides, *iEnglish* Book 1 by Hanlin (翰林) Publisher was selected as the main teaching material for the subjects during the semester. Due to the aim of exploring the effects of DI on grammar, the treatment was based on one differentiated instructional strategy called tiered tasks to design three differentiated worksheets of every grammar unit. Furthermore, the researcher also applied one DI grouping strategies flexible grouping to provide the best learning experience for different proficiency learners.

In addition to the quantitative data, a list of focus group interview questions was designed to help the researcher probe into learners' thoughts regarding their DI experiences in a qualitative approach. Each of these instruments had unique study focuses and thus needed further explanation in the following subsections.

3.3.1 The Pretest and the Posttest

The pretest and the posttest were both grammar tests compiled by the researcher. The content of the two tests was selected from an item pool set up by Minister of Education (Figure 1). All the items were chosen from the item pool based on the grammar focus covered from Starter to Unit 5 in *iEnglish*, the participants' textbook.

The item pool was an open resource and the questions there were designed by in-service teachers and the experts of National Academy of Education Research (Figure 1). All the questions were categorized by subjects and volumes. In English, the items were compiled according to the content of language learning structure which was also known as grammar (see Figure 2).



Figure 1. The user interface of the item pool



Figure 2. The main structure of the English item pool

The pretest (Appendix B) was made up of 30 multiple choice questions and

administered in both classes in order to collect the data of their initial ability on grammar before receiving formal instruction. The participants got 2 points for each correct answer. It meant that the total score ranged from 0 to 60 points. Then the two classes were randomly assigned to be the experimental group and the control group. The test result was also utilized to divide the participants of each class into three proficiency levels: HPL, IPL and LPL. As Gregory and Chapman (2007) have suggested, more levels of readiness may be identified and adjusted, but when first starting the process of DI, three levels are complicated enough to manage.

The posttest (Appendix C) was administered in the 14th week of the semester. Unlike the pretest, the posttest comprised three sections: 10 multiple choice questions, 10 fill-in blank questions and 10 sentence making questions which served to test whether DI catered to students with different proficiency levels. Each correct answer was worth 2 points in each section, and every mistake in fill-in blank or sentence making questions was deducted by 1 point with 2-point deduction as the maximum of each item. The result of the posttest was used to compare the performance of two groups on grammar learning after the treatment to answer the research question one. In the meanwhile, HPL, IPL and LPL in the experimental group compared their scores with their counterparts in the control group to answer the research question two.

In view that the pre- and posttests aimed at testing grammar points taught in the 6 units, each of them contained 30 questions with 5 questions for each unit respectively. To make sure of the content validity of the pre- and posttests, a two-way specification table of the grammar points was employed (See Table 3.3). Moreover, a pilot study was conducted prior the formal study to test the pretest and the posttest in the early September of 2013. The participants in the pilot study was one class that did not join the main study. There were a total of 27 participants in the pilot study. The

pretest and the posttest were piloted by their homeroom teacher respectively. The two tests required approximately forty minutes to complete. The test results were evaluated for effectiveness and for validity by the researcher and two colleagues who were also the English teachers of the seventh graders.

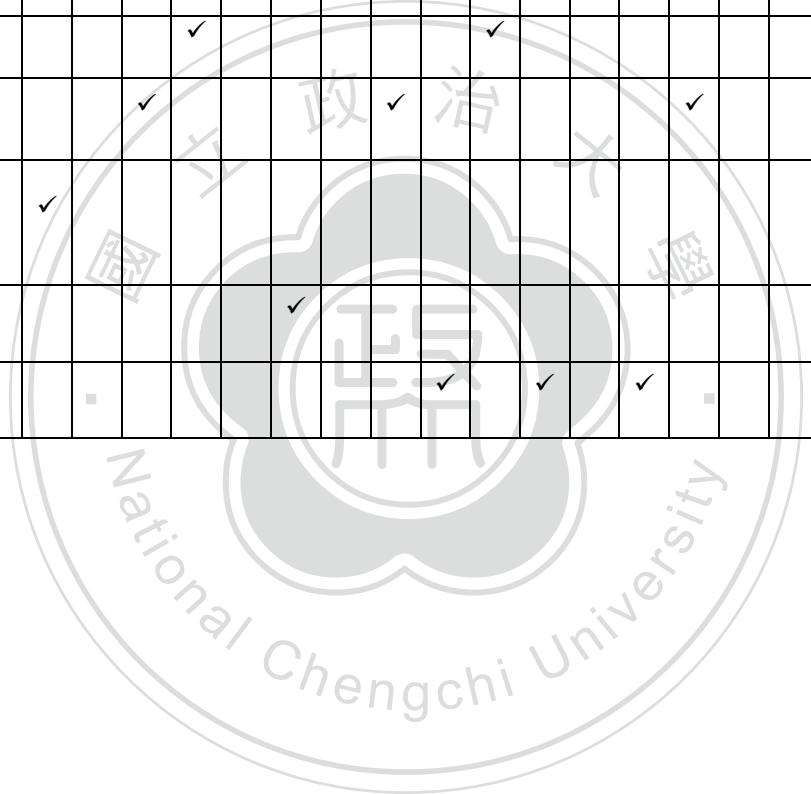
An item analysis was performed on the 30 items of the pretest and the posttest to establish their reliability. Reliability is the consistency with which a measurement instrument yields a certain result when the entity being measured has not changed. It is an estimate of the internal consistency of the instrument (Leedy & Ormrod, 2001). Because a test-retest reliability was not feasible in this study, Cronbach's Alpha Reliability Coefficient was used to estimate the internal consistency of the instrument. An acceptable range for the reliability coefficient is from .70 to .90. The value obtained in the pilot study, based on the 30-item of the pretest and posttest , was a Cronbach Alpha of .749 and .913 respectively. As a result, both the two tests were found to be reliable in the pilot study.

Table 3.3

Two-way Specification Table of Grammar Points from Starter to Unit 5

	Pretest	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	Posttest	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Unit	Grammar Points																															
Starter	Personal pronouns (I, you, he, she, it) and be V	✓					✓														✓											
	determiners (my, your, his, her, its)			✓								✓																				
Unit 1	Question form of be verb				✓													✓										✓				
	Wh-question (who....)										✓										✓											

Unit 2	Wh-question (how old...?)					✓																										✓								
	Adjectives								✓																	✓													✓	
Unit 3	Plurals (-s,-es,-ies)							✓					✓								✓							✓												
Unit 4	Wh-question (where...?)					✓																✓																✓		
	Prepositions											✓																										✓		
Unit 5	There is/ are...																																				✓			✓



3.3.2 The Han-Lin *iEnglish* Book 1

At the end of every academic year, English teachers are required to choose an appropriate textbook version suitable for the junior high school students' cognitive levels. The members of English Teaching Committee in this school voted the Han-Lin *iEnglish* Book 1 for seven graders at the subjects' school in 2013 for several reasons. First, the textbook was edited based on the Nine-Year Integrated English Curriculum Guidelines of Elementary and Junior High Schools (Ministry of Education, Republic of China, 2008). Second, the publisher of the textbook could provide many useful supplementary teaching materials, such as posters, CDs and newspaper. Third, the content of the textbook could reflect the authenticity and appropriateness of the language, and the trends of the latest topics. Fourth, the four skills are integrated in a balanced way and there was no cultural bias in it. Fifth, the format of the textbook was characterized by the clarity of typesetting, good quality and clarity of illustration and editing. According to these practical criteria, the Han-Lin *iEnglish* was chosen as the instructional material for the seven graders in 2013 academic year.

There are nine units in the textbook, starting from Starter to Unit 8. Each unit at least covers one grammar focus with sentence patterns. The presentation of the sentence pattern in each unit usually follows the following structure: tables of examples first, and then some grammar practices such as gap-fills or making sentences with picture cues (Figure 3).

Sentence Pattern 1

文法加油站 句型歸納

How old	are	you?	I	am	ten (years old).
	is	he?	He	is	one (year old).
		she?	She		

Read. 讀讀看 1-34 聽力

11 eleven	10 ten	27 twenty-seven
12 twelve	20 twenty	44 forty-four
13 thirteen	30 thirty	
14 fourteen	40 forty	
15 fifteen	50 fifty	
16 sixteen	60 sixty	
17 seventeen	70 seventy	
18 eighteen	80 eighty	
19 nineteen	90 ninety	

Speak and write. 說說看 寫寫看 聽力 解答

43 1 she / twenty
A: How _____ old is she?
B: She's twenty (_____ years _____ old).

44 2 Ivy's father / forty-two
A: _____ Ivy's father?
B: _____ (_____).

45 3
A: How old are you?
B: _____

Sentence Pattern 2

文法加油站 句型歸納 補充習題

A 聽述句: He _____ is _____ (not) _____ old.

疑問句: Is _____ he _____ old?

簡答句: Yes, he is.
No, he's not.
 he isn't.

Speak and write. 說說看 寫寫看 聽力 解答

46 1 Jack / young
A: _____ Is _____ Jack _____ young _____ ?
B: No, he _____ isn't _____. He's _____ old _____.

47 2 Tina / sad
A: _____ Tina _____ ?
B: No, she _____ (_____).

48 3 Lisa / hungry
A: _____ ?
B: _____ (_____).

49 4
A: Are you happy?
B: _____

Figure 3. The presentation of the sentence pattern in Han-Lin iEnglish Book 1

3.3.3 Tiered Task--the Three Differentiated Worksheets

Heaton (1990) mentions that assessments designed by the teachers are the most useful because teachers understand their students' strengths and weaknesses as well as the skills and language areas needed to be focused on. Classroom assessment, such as writing worksheets, can help teachers assess learners' performance, enhance teachers' effectiveness and benefit students (Hsieh, 2011). Additionally, Gower and Walters (1983) pointed out four main approaches for teachers to use self-designed worksheets: 1) to copy the materials which aren't available to students, 2) to make cards for communication activities, 3) to make the teacher's own exercises and 4) to adapt published materials.

In this study, the last two approaches were adopted. The researcher adapted the grammar materials in the textbook and designed three differentiated worksheets for grammar exercise based on the same grammar points of the unit. In other words, the participants who were grouped by their performance on the pretest would be assigned to different tiered tasks.

Tomlinson's tiered tasks were used as the framework to construct the

differentiated worksheets in this study. Tomlinson (1999) described a "tiered task" as a differentiated strategy that addresses a particular standard, key concept and generalization, but allows several pathways for students to arrive at an understanding of these components based on students' interests, readiness, or learning profiles. Among the important reasons for choosing Tomlinson's work are that this work addresses the needs of all learners at different levels. In this study, the focus is not only on advanced learners, but also on average and below anticipated level learners. This work emphasizes effective instruction in heterogeneous settings. Because a typical EFL classroom at junior high school in Taiwan is comprised with mixed-ability students, Tomlinson's work fits the population of this study.

A whole set of tiered tasks presented three tasks for learners to produce different linguistic output. In this study, Task A for LPL was multiple-choice questions with three possible answers on the worksheet (Appendix D). Task B for IPL was gap-fill questions which were slightly different from Task A, in that the subjects had to write down answers on their own, without possible choices provided to them (Appendix E). Task C included 10 sentences-making exercises with picture cues. Task C provided no extra support except picture cues in order to challenge HPL (Appendix F).

3.3.4 Focus Group Interview

A group interview is essentially a qualitative data gathering technique (Denzin & Lincoln, 2011). Evidence from focus group interviews suggests that attitudes and perceptions associated with concepts are developed in part by interaction with other people (Krueger & Casey, 2009). Blumer (1969) commented that a group interview has the potential to bring a small individuals together as a discussion and resource group and works better than a one-on-one interview in promoting self-disclosure among participants. The intention of using focus group interview in this study was to

understand participants' perceptions, feelings, attitudes and motivation towards DI. Edmunds (2000) recommends a full-sized focus group with eight to ten participants when the participants are teens. This size allows interaction while not requiring each individual participant to constantly speak which will create a more comfortable environment and will be more conducive to a successful discussion. Therefore, the researcher conducted three focus group interviews with the interviewees from LPL, IPL and HPL in the experimental group respectively in order to gather data for research question three.

These questions were used as a guide for the interview process (Appendix G). Based on Hatch (2002), a protocol is only a guide to help you prepare for an interview. Because a researcher never knows what data a participant will provide, the researcher should allow the participants' responses to guide the interview process. Since this was the basis of the qualitative portion of this research, these questions were a valid way to start an interview. The questions are listed as follows and translated into Chinese version for the subjects. Questions 1 and 2 required the interviewees to describe the process of grammar learning, state their reasons why they can/can't keep up with the process and . Question 3 asked the interviewees whether they liked the process or not. Questions 4 and 5 focused on realizing the interviewees' opinions about the learning materials. Question 6 collected the data of the participants' learning difficulties in English and question 7 asked if DI was helpful to solve the difficulties they mentioned in question 6. The last question encouraged the interviewees to share their thoughts with others.

3.4 Design and Procedures

A lesson plan was proposed to describe the design for the differentiated instruction. There were three stages in the lesson plan as follows.

Stage 1: The instruction of grammar rules

In this stage, the instructor explained the usage of grammar rules to the whole class. And the a whole set of tiered tasks were assigned to the three groups of learners. These tasks allowed different proficiency learners to produce different linguistic output.

Stage 2: Practice for grammar rules

After the arrangement of tiered task, the participants were required to finish the task in their flexible grouping setting. While the students were engaging in their tasks, the instructor worked around within the groups to give additional instruction to the slow learners.

Stage 3: check answers and assign homework

In the last stage, the instructor checked the answers of the differentiated worksheets with LPL, IPL and HPL respectively. The students who finished the task could review or preview the lesson by themselves. In the end of the class, the instructor quickly reviewed the grammar rules and assigned homework.

In addition to the tiered task, the process for the participants to complete the tasks was differentiated as well. The researcher applied the framework of flexible grouping to ensure the learning process was based on DI. Chapman and King (2007) mentioned that flexible grouping gives students opportunities to learn information in a total class, alone, with a partner or with a small group. Other alternatives include random groupings, peer-to-peer tutoring, multiage teams, or cooperative learning situations. According to Ford (2005), the whole class instruction often meant many students didn't learn the appropriate content for their levels. Thus, in this current study, the researcher adapted Ford (2005) model: Grouping Without Tracking (Differentiating by Levels of Support) to effectively address the diverse needs of

learners. The three groups of students were arranged to three group designs respectively. LPL were put in a small group where they can discuss with more partners and the teacher can efficiently provide direct support to a group of low achievers. IPL who needed less support from the teacher were put in pairs and they could share with their partner. HPL who had the ability to learn independently were arranged to complete the task individually. Table 3.4 illustrates the content of 3 tiered tasks and flexible grouping for LPL, IPL and HPL.

Table 3.4

Content of 3 Tiered Tasks and Flexible Grouping

participants	tiered tasks	flexible grouping
LPL	Task A: 10 multiple-choice items	small group
IPL	Task B: 10 gap-fill	pairs
HPL	Task C: 10 sentences-making with picture cues	individual

Table 3.5 states the design of the experimental group and the control group during the whole study.

Table 3.5

The Operation of the Experimental Group and the Control Group

	the experimental group	the control group
learning content	three differentiated worksheets	exercises of the textbook
learning process	flexible grouping learning	traditional lecture method

Besides, the procedure of the study was implemented through eight phases. Each phase was stated in detail as follows (Table 3.6).

Table 3.6

The Procedure of the Main Study

Phase	Time	Content
Phase 1	2013.8	The researcher designed the two English Grammar Tests, the pretest and the posttest.
Phase 2	9.2-9.12	After piloting the pre-and posttests, the researcher revised them according to the result of item analysis.
Phase 3	9.13-9.15	All the subjects took the pretest in the formal study. The scores of the pretest were utilized to divided the participants into three subgroups.
Phase 4	9.16-9.20	Two classes of the subjects were randomly assigned to be the experimental group or the control group.
Phase 5	9.16-11.29	The researcher administered DI for 11 weeks to the experimental group.
Phase 6	12.2-12.6	All the subjects took the posttest in the 12 th week of the semester. The researcher collected the scores of the posttest for data analysis.
Phase 7	12.9-12.13	The subjects of the experimental group received focus group interview in the 13 th week.
Phase 8	12.16-	With the data, the researcher made comparisons of the subjects scores between before and after DI. Meanwhile, the research transcribed the focus group interview to do the content analysis.

3.5 Data Analysis

The statistical package SPSS was used to compute the data collected from the pre- and post-tests to answer the research questions listed earlier in chapter 1.

This study adopted a quasi-experimental design. Both qualitative and quantitative analyses were used to answer research questions. The quasi-experimental design is a common alternative to true experimental designs in the evaluation of education programs when, as in this study, random assignment is not possible or practical. Due to the nonequivalent-groups design, analysis included adjusting the pretest scores for measurement error. Otherwise, one-way analysis of covariance (ANCOVA) model may contain bias and may not present the true treatment effect.

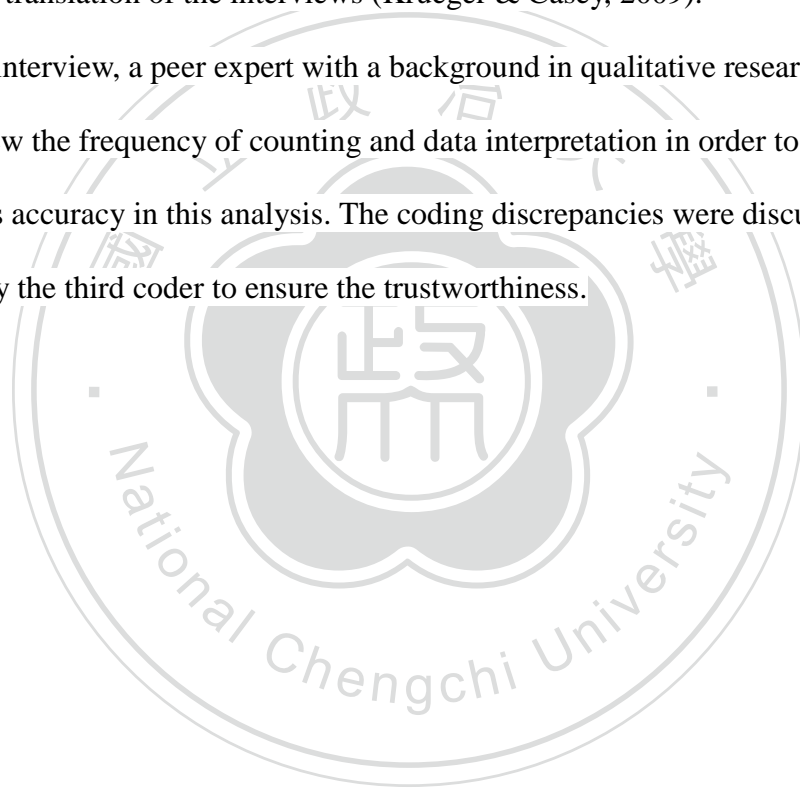
To answer the first research question, after adjusting the pretest mean scores, ANCOVA was implemented to compare the adjusted mean scores of the posttest to check if there is a significant difference between the experimental group and the control group.

To answer the second research question which aims at evaluating the effects of differentiated and non-differentiated instruction on high, intermediate and low proficiency learners respectively, descriptive statistics were stated first in order to provide information related to central tendency and dispersion Then ANCOVA was performed to examine if learners of different proficiency level benefit from DI differently.

As for the third question, a focus group interview was employed to explore the participants' thoughts toward DI. The purposeful sample of participants in the focus group was to better understand the implementation of DI. Data collected from the focus group required that careful notations be made to ensure coding and emerging themes were communicated accurately based on the participants' conversation. The

note-based content analysis was used to analyze the focus group interviews. The raw data used for the note-based content analysis relied primarily on filed notes, which were based on observations and comments in the interviews, a debriefing session and summary comments at the conclusion of each interview (Krueger & Casey, 2009). In order for analysis to be verifiable, the data stream began with field notes and recordings that were taken during the interviews, continued with the oral summary of key points during the interviews, and also included the electronic recording with the possibility of a translation of the interviews (Krueger & Casey, 2009).

After the interview, a peer expert with a background in qualitative research was invited to review the frequency of counting and data interpretation in order to check the researcher's accuracy in this analysis. The coding discrepancies were discussed and resolved by the third coder to ensure the trustworthiness.



CHAPTER 4

RESULTS

This chapter presents the result derived from the present study and a summary of the findings. The present study investigated the effects of differentiated instruction on junior high school students' grammar learning in Taiwan. The main issue was explored in three areas:

1. Are both “differentiated instruction” and “non-differentiated instruction” equally beneficial for students on their grammar learning?
2. Did high-, intermediate- and low proficiency learners benefit to different extent from "differentiated instruction" and "non-differentiated instruction" respectively?
3. What were the learners’ opinions after they had experienced differentiated instruction?

4.1 Comparisons of the Participants' Performance in the Pretest and Posttest

Descriptive Statistics for the pretest and posttest results are presented in Table 4.1. Range of scores as well as observed scores on the pre and post measures are shown. All distribution were are plotted and scanned for kurtosis and skewness in Figure 1.

Table 4.1

Descriptive Statistics for the Experimental Group and the Control Group

Group	N		Mean		Range		SD	
	pre	post	pre	post	pre	post	pre	post
EG	27	27	38.29	40.70	12-56	6-56	10.90	12.34
CG	27	27	36.14	34.07	12-54	2-58	13.54	17.02

Note: EG: Experimental Group; CG: Control Group

The mean raw scores of pretest and posttest are graphically displayed in Figure 1 below. Visual analysis of the scatter plot provides evidence that the two groups do not appear to be equivalent in terms of their scores. Their test scores ranged from 12 to 56 before the study and ranged from 2 to 58 after the 11-week intervention.

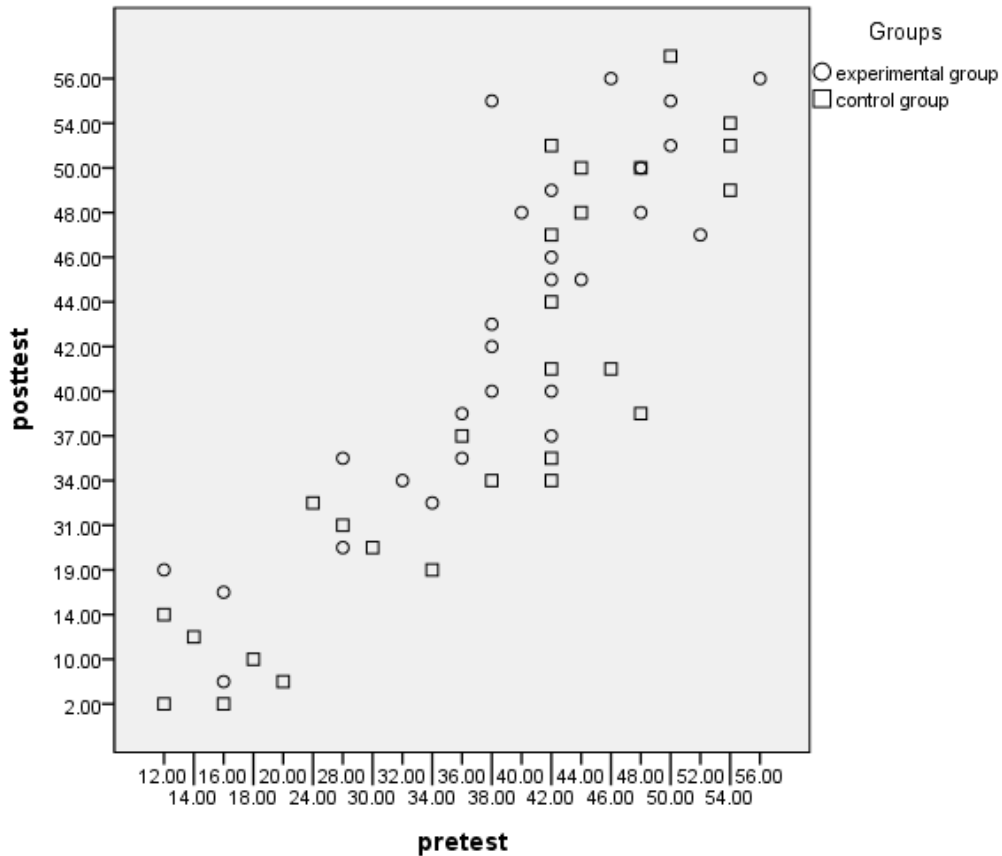


Figure 4. Bivariate distribution of pretest and posttest for the experimental and control groups

Each distribution was found to skew negatively, indicating a higher proportion of subjects fell above the mean.

With the aim of examining whether or not the grammar knowledge of the experimental group and the control group differed before DI, the Independent Samples *t*-test was run to analyze the scores on the pretest. The results are displayed in Table 4.2.

Table 4.2

T-test Results of the Pretest Performance

Group	N	Mean	SD	<i>t</i> value	<i>df</i>	<i>p</i> (2 tailed)
EG	27	38.29	10.90	.642	52	.524
CG	27	36.14	13.54			

The *t* value is 0.642 and the probability level is 0.524, confirming that there was no significant difference between the control group and the experimental group at the outset of the experiment.

Table 4.3 shows ANCOVA results for the posttest using adjusted the pretest scores. Results show that for the posttest, the adjusted posttest mean of the experimental group (M=39.51) was significantly different from the adjusted posttest mean of the control group (M=35.26), $F_{1,52}=6.48$, $p=.01$. Statistically speaking, students in the experimental group improved their performances after receiving DI.

Table 4.3

ANCOVA Results of the Posttest

	Adjusted means		<i>df</i>	<i>F</i>	<i>P</i>	Partial Eta squared ^a
	EG	CG				
posttest	39.51	35.26	1	6.48	.01	.113

^a According to Cohen (1997), Partial eta squared may be interpreted as .01= small effect size, .06= medium effect size, .14=large effect size.

4.2 HPL Performance in the Pretest and Posttest

In order to see whether HPL in the experimental group improved their grammar learning under the researcher's DI during the eleven weeks, the HPLs' performances

on posttest were compared with ANCOVA while controlling for the covariate-pretest scores. Table 4.4 states the raw scores of pretest and posttest for each group and the ANCOVA results are presented in Table 4.5. Results indicated the adjusted posttest mean of the experimental group for HPL is 51.27 and of the control group is 48.97 but the difference of HPL between the two groups did not differ significantly ($p=.38$).

Table 4.4

Mean Raw Scores and Standard Deviations for HPL

Item	HPL in EG			HPL in CG		
	N	M	SD	N	M	SD
pretest	8	49.25	3.69	8	49.75	3.91
posttest	8	51.12	4.29	8	49.12	6.33

Table 4.5

ANCOVA Results for HPL on the Posttest

Adjusted means						
	HPL in EG	HPL in CG	df	F	P	Partial Eta squared ^a
posttest	51.27	48.97	1	.81	.38	.059

In addition, part of the second research question can also be discussed according to the findings in the Independent Samples *t*-test for HPLs' scores on each subsection of the posttest. The mean raw scores for each subsection and the comparison with *t*-test are listed in Table 4.6. The *t*-test yielded no significant difference in the subsection of multiple choice ($p=.149$). As for fill-in blank, there was also no significant difference found between the two groups ($p=.483$). And the comparison of

the sentence making part between the HPLs in CG and EG did not reveal significant difference ($p=.300$).

Table 4.6

T-test results for HPL Performances on Each Subsection of the Posttest

	Group	N	Mean	SD	t value	df	p
multiple choice	EG	8	18	1.51	1.528	14	.149
	CG	8	16.5	2.32			
fill-in blank	EG	8	14.5	3.16	.720	14	.865
	CG	8	14.75	2.60			
sentence making	EG	8	18.62	1.06	1.076	14	.494
	CG	8	17.62	3.88			

4.3 IPL Performance in the Pretest and Posttest

The IPL performance in the two tests are displayed in Table 4.7. The scores are analyzed with ANCOVA as well, and the results are presented in Table 4.8. The probability level (p) for IPLs' performance on the posttest is 0.075, indicating that IPL in the experimental group did not perform significant better than those in the control group on the posttest.

Table 4.7

Mean Raw Scores and Standard Deviations for IPL

Item	IPL in EG			IPL in CG		
	N	M	SD	N	M	SD
pretest	10	40.2	1.98	10	40.4	3.23
posttest	10	44.5	5.27	10	39.1	9.50

Table 4.8

ANCOVA Results for IPL on the Posttest

Adjusted means						
	IPL in EG	IPL in CG	df	F	P	Partial Eta squared ^a
posttest	44.65	38.94	1	3.602	.075	.175

Aiming at explore the effect of DI on each subsection, the researcher analyzed the scores of different subsections with Independent *t*-test. The results are showed in Table 4.9.

Table 4.9

T-test Results for IPL Performances on Each Subsection of the Posttest

	Group	N	Mean	SD	t value	df	p
multiple choice	EG	10	17.2	2.14	1.546	18	.140
	CG	10	15.4	2.98			
fill-in blank	EG	10	11.7	3.05	.834	18	.415
	CG	10	10.4	3.86			
sentence making	EG	10	15.6	2.36	1.263	18	.223
	CG	10	13.3	5.25			

The *p* level of multiple choice section is 0.14, which did not reach the 0.05 level. It suggested that the performances of IPL in the experimental group did not significantly differ than those in the control group. As for fill-in blank and sentence making parts, the *p* values are 0.415 and 0.223 respectively, which both did not reveal

significant differences between IPL in EG and those in CG on these two sections.

4.4 LPL Performance in the Pretest and Posttest

As for LPL performance in the pretest and posttest, the results are summarized in Table 4.10. ANCOVA was employed to analyze the scores of the posttest, and the results are presented in Table 4.11. It showed that the LPL performance of the experimental group was not significant different than those of the control group after DI ($F=1.284, p=0.275$), revealing that DI did not help LPL improve their grammar learning significantly.

Table 4.10

Mean Raw Scores and Standard Deviations for LPL

Item	LPL in EG			LPL in CG		
	N	M	SD	N	M	SD
Pretest	9	26.44	9.36	9	19.33	6.70
posttest	9	27.22	10.79	9	15.11	11.95

Table 4.11

ANCOVA Results for LPLs on the Posttest

	Adjusted means					
	LPL in EG	LPL in CG	df	F	P	Partial Eta squared ^a
posttest	23.14	19.18	1	1.284	.275	.079

Table 4.12 indicated the results of the t-test that LPL in the experimental group perform better than those in the control group on the multiple choice section statistically ($p=0.033$). However, in the rest two sections: fill-in blank and sentence

making parts, the results of LPLs' performance did not present there were significant differences existed between EG and CG.

Table 4.12

T-test Results for LPL Performances on Each Subsection of the Posttest

	Group	N	Mean	SD	t value	df	p
multiple choice	EG	9	13.55	4.66	2.32	16	.033*
	CG	9	8.22	5.04			
fill-in blank	EG	9	6.88	4.80	1.66	16	.115
	CG	9	3.55	3.57			
sentence making	EG	9	6.77	4.23	1.74	16	.101
	CG	9	3.33	4.15			

4.5 Data from the Focus Group Interview after the Differentiated Instruction

After the 11-week implementation of DI, the researcher interviewed the participants of the experimental group, attempting to understand their thoughts about the learning process. The focus group interview was held in a conference room during the lunch break. Each focus group interview lasted about 16 minutes and was audio-taped. Then, the three interviews were transcribed by the researcher and cross-checked by a peer expert. All the excerpts appeared in this section were collected in Appendix H.

Based on their feedback, some important factors were highlighted, which are grammar learning experience, grammar learning materials and students' English learning problem. Each category was analyzed in the following subsections.

I. Learning Experience

Table 4. 13 displayed the percentages of the interviewees who liked the process

of DI

Table 4.13

Percentages of the Interviewees Who Liked the Process of DI

The participants	Frequency	Percentages
LPL	9	100%
IPL	10	100%
HPL	3	37.5%

Grammar learning process was one of the main factors which affected the learning outcome. The interviewees of HPL, IPL and LPL could clearly describe the steps and what they did during the grammar class. About the pace of the process, three groups of interviewees all agreed that it was not a problem to keep up with the process. One of HPL said he learned the grammar concept before. I2 mentioned they could discuss with their partner to keep up with the process and I3 said he did more challenging exercises in cram schools. L1 and L5 also mentioned that they could discuss with their group members and L6 said he could check his answers with others.

Both LPL and IPL adopted a positive attitude to the process of grammar learning because of the interaction between team members (Table 4.13). By contrast, there are only three students of HPL liked the process of grammar learning and they expressed their divergent thought. H5 said that his reason why he didn't like the process was that he didn't like to change seats and H6's reason was that the process showed a lack of discussion. However, some interviewees held a more positive thought. For example, H3 thought DI was a novel way of learning grammar. H2 analyzed the pros and cons of DI and concluded that finishing the worksheet independently had them control their own learning rate but he lost the opportunity of discussion.

II. Grammar learning materials

Students were provided with differentiated worksheets as the main learning materials. Most of the interviewees believed that the worksheets were helpful for the grammar learning (Table 4.14).

Table 4.14

Percentages of the Interviewees Who Thought DI Was Helpful

The participants	Frequency	Percentages
LPL	8	89%
IPL	8	80%
HPL	4	50%

Their viewpoints were collected from the excerpts. L6, L8, I2, I8 and H3 offered a comment that the worksheet could help them gain more impression on the grammar points even though I8 considered the worksheet was simple. Within the same proficiency group, some interviewees had quite different feelings towards the same worksheet. For example, I7 wants to do more difficult worksheet. By contrast, I4 conveyed that finishing the worksheet took him much time.

As for the content of the worksheet, L1 and L2 mentioned the worksheet offered them chances and items to discuss, and L1 also pointed out the differences between the worksheet and the exercise in the textbook. H1 thought he was more adept in making sentences by doing the worksheets. H4 and H8 both indicated DI made no difference for their grammar learning because he had learned the grammar rules before. One interesting point proposed by H2 was that DI offered the freedom to look up the words in the dictionary and finish the worksheet without too much time pressure.

III. Students' English learning problem

Table 4.15 showed the distribution of the interviewees' learning problem in English. The most difficult parts of learning English for LPL were the sentence making part and vocabulary. IPL had various responses to their learning difficulties, such as reading outside readings, memorizing new vocabulary, speaking or making sentences. HPL mentioned their problems were speaking, grammar, listening and reading respectively which nearly covered four language skills. One discovery was worth noting: over two thirds of the students in LPL thought sentence-making was their major learning problem.

Table 4.15

Distribution of the Interviewees' Learning Problem

	LPL	IPL	HPL
vocabulary	22%	20%	0%
sentence-making	78%	20%	0%
outside readings	0%	20%	0%
reading	0%	0%	25%
speaking	0%	20%	37.5%
listening	0%	0%	12.5%
grammar	0%	0%	25%
no opinion	0%	20%	0%

All the interviewees of LPL and IPL agreed that the process of doing worksheets would help them deal with learning difficulties (Table 4.16)

Table 4.16

Percentages of the Interviewees Who Thought DI could Solve Their Learning Problem

The participants	Frequency	Percentages
LPL	9	100%
IPL	10	100%
HPL	6	75%

The interviewees believed that DI could help them deal with learning difficulties and proposed some points. L3, L7, I8 and I3 focused on the function of the discussion. L7 also mentioned that each one could be responsible for one portion of the worksheet. H3 liked the way of DI because he could make use of his own time to solve his problem and review the lesson. H2 thought they could gain a deep impression by finding the answers of the worksheet themselves. One suggestion was offered by H8; he hoped the instructor could assign a partner for him to practice speaking.

However, not all the interviewees were satisfied with their grouping and they also offered some feedbacks about the grammar class. Some interviewees from different proficiency groups would like to change to another group, from LPL to HPL, or from IPL to LPL. H5 thought LPL's discussion form may encourage various opinions rather than only one or two answers. I1 thought the grouping was helpful because some were timid to ask questions in the whole class setting but willing to discuss with their team members in the same ability group.

4.6 Summary of Results

The results and findings presented in this chapter were generated from the pretest

and posttest with ANCOVA, Independent *t*-test and the focus group interview. A brief summary of findings is made here, led by the three research questions.

The findings of this study revealed there was a significant difference between the subjects who received differentiated instruction in the experimental group and those who didn't in the control group on their grammar scores. These findings indicated EG students' grammar scores significantly increased from the pretest ($M=38.29$) to the posttest ($M=39.51$).

To further investigate different proficiency learners' grammar achievement for the second research question, three subgroups--low proficiency, intermediate proficiency and high proficiency learners' pretest and posttest scores were compared. It was found that the three subgroups of the experimental group had no significant improvement compared with their counterparts in the control group on the whole performance of the posttest EGT-2. However, by analyzing the scores on the three subsections of the posttest: multiple choice questions, fill-in blank questions and sentence making questions, it was shown that low proficiency learners in the experimental group improved their performance in the multiple choice section significantly ($p=.033, <.05$) in comparison with those in the control group.

Finally, as for learners' experience in this DI setting, their thoughts about learning process, learning materials and English learning problem were collected and analyzed. It was found that not all of the interviewees liked the process of DI, particularly for HPL. Only three of eight HPL reported they liked the process of DI. One student of HPL stated his reason that he was assigned to finish the differentiated task individually but he preferred group work. However, another interviewee of HPL reported she liked the process of working independently because she could control her own learning rate.

As for the learning materials of DI, 88% of LPL thought it was helpful for their learning, 80% of IPL and 50% of HPL endorsed the point respectively. After further investigation of the subjects' learning problem in English, the data indicated 78% of LPL's difficulties were sentence making parts, and 22% were vocabulary. By contrast, IPL's and HPL's learning problem scattered in different categories such as vocabulary, sentence-making, outside readings, reading, speaking, listening and grammar.



CHAPTER 5

DISCUSSION AND CONCLUSION

This primary purpose of the present study was to explore the effectiveness of DI on junior high school students' grammar learning. The subsidiary purposes were to explore its effectiveness on different proficiency learners and their perception after receiving DI. A total of 54 junior high school students participated in the twelve-week DI grammar learning activities. A pretest was administered at the outset of the study and the participants took a posttest eleven weeks after the pretest. In addition, a focus group interview was used to collect the participants' opinions after they had experienced DI.

This chapter presented the discussion, the possible explanations, reasons and the relative literature was reviewed and compared. Finally, the conclusions, implications for practices and recommendations were provided for future research.

5.1 Discussion

The findings of this study revealed there was a significant difference between the subjects who received differentiated instruction in the experimental group and those who didn't in the control group on their grammar scores. These findings indicated EG students' grammar scores significantly increased from the pretest ($M=38.29$) to the posttest ($M=39.51$). These findings were parallel to those of McCullough (2012), who found there was a significant improvement in Grade 2 students' vocabulary and reading comprehension performance after the implementation of DI. Numerous studies (Baumgartner et al., 2003; Dangelo, 2006; Johnson, 2010; King, 2010; McCullough, 2012; Parker, 2011) have provided evidence of the effective and positive outcomes of DI. DI targets the learning needs of all students, especially struggling

ones. This teaching approach allows students to be engaged in tasks that are matched to their readiness level, interest level, and learning profile. Moreover, DI gives every student the opportunity to achieve and to be successful.

To further investigate different proficiency learners' grammar achievement for the second research question, three subgroups-low proficiency, intermediate proficiency and high proficiency learners' pretest and posttest scores were compared. It was found that the three subgroups of the experimental group had no significant improvement compared with their counterparts in the control group on the whole performance of the posttest EGT-2. However, by analyzing the scores on the three subsections of the posttest: multiple choice questions, fill-in blank questions and sentence making questions, it was shown that low proficiency learners in the experimental group improved their performance in the multiple choice section significantly ($p=.033, <.05$) in comparison with those in the control group. The results echoed with those findings in Burns (2005), which indicated the performance of eighth grade students on the Grade Eight Proficiency Assessment showed gains for lower achieving students in the area of Language and Arts Literacy and Science, but the rest of the students have not shown increased achievement.

Finally, as for learners' experience in this DI setting, their thoughts about learning process, learning materials and English learning problem were collected and analyzed. It was found that not all of the interviewees liked the process of DI, particularly for HPL. Only three of eight HPL reported they liked the process of DI. One student of HPL stated his reason that he was assigned to finish the differentiated task individually but he preferred group work. However, another interviewee of HPL reported she liked the process of working independently because she could control her own learning rate. The findings were in accordance with Graham (2009), which

reported that the participants did not like to be singled out or compared but they enjoyed doing different things in class, working at their own pace and having a choice whether to work alone or with another.

As for the learning materials of DI, 88% of LPL thought it was helpful for their learning, 80% of IPL and 50% of HPL endorsed the point respectively. After further investigating the subjects' learning problem in English, the data indicated 78% of LPL's difficulties were sentence making parts, and 22% were vocabulary. By contrast, IPL's and HPL's learning problem scattered in different categories such as vocabulary, sentence-making, reading magazine, reading, speaking, listening and grammar. We may infer LPL's learning problem in English may be more unified so DI could effectively impacts on their attitudes and their learning outcomes. The findings were in agreement with Tseng (2008), in which the result showed the reason of students' poor English performance was because their maladjustment was unrecognized. The researcher suggested that teachers should closely examine students' adjustment problem in learning English by employing the diagnosis exams at the beginning of the new semester in order to offer appropriate support.

Because the current study is based on the theory of DI and the two particular DI strategies were adopted, the following section aims to discuss the concept of tiered task and flexible grouping.

5.1.1 Tiered Task

DI adopted the concept of "readiness" to determine the alignment of tasks with instructional goals and objectives. That means the difficulty of tasks taught should be slightly in advance of students' current level of mastery. This is grounded in the work of Vygotsky (1978), the zone of proximal development (ZPD). In this current study, the researcher scaffolded the students in the experimental group with three varying

tiers based on their pretest performance. However, the findings from the focus group interviews indicated that some subjects thought the tasks were too easy for them which meant the tiered tasks didn't actually suit the learners' diverse readiness levels. Here, the result supported the previous study (Hall, 2002) for the point that the initial application of DI came to practice for students considered gifted who perhaps were not sufficiently challenged by the content provided in the general classroom setting and full models of DI are still developing. Therefore, the findings underscore the importance of recognizing the suitable tiered tasks for each individual. Thus, it may suggest that Teachers should design the differentiated materials that suit students' needs more by understanding students' learning difficulties.

5.1.2 Flexible Grouping

Research on ability grouping has a long history and encompasses both qualitative and quantitative studies. Advantages and disadvantages of ability grouping have been identified. Strict ability grouping makes the school a more rigid environment. According to Mills (1998), the ability grouping has minimal positive influence on achievement but often results in low self-esteem. Flexible grouping provide another alternative within classes. Findings from this current study suggested that the classrooms with flexible grouping showed significantly higher gains on their performance than the traditional heterogeneous classrooms.

However, the analysis of the findings that indicated none of the three subgroups significantly outperformed than their counterparts in the control group seemed to lend some support to the view that flexible grouping may not be beneficial to all the three subgroups. Flexible grouping means there are more small learning groups in a classroom setting. The amount of teacher's time that can be spent on each learning group was less than that on the whole classroom instruction. What's more, the teacher

may unconsciously pay more attention on the low proficiency learners and that would lead to the results that intermediate and high proficiency learners did not make remarkable headway compared with the low proficiency ones.

5.2 Pedagogical Implications

From the findings, some pedagogical implications can be drawn for teachers and researchers who are interested in the effectiveness of DI. First, DI may be effective in grammar instruction especially for low achievers. Therefore, adapting the practices of DI, perhaps one content area at a time, could motivate and challenge the students if they are to be given suitable tiered tasks to complete with success.

Second, based on the current study, high achievers didn't make significant progress after receiving DI. The possible reason drawn from the focus group interview may be their feelings about the grouping and the materials. Some HPL disagreed on the way of learning individually and the learning materials didn't seem to be challenging enough for them, either. Hence, teachers should take students' thoughts into consideration when they plan DI and adjust the way of employing DI by understanding the participants' feedbacks.

According to the result of the focus group interview, IPL mentioned their difficulties in learning English. Few of them thought grammar learning was difficult and that might explain why IPL didn't show remarkable progress after the intervention of DI. Thus, conducting a survey to realize students' difficulties in the beginning of a new semester might be advantageous for teachers to design the DI curriculum.

Finally, according to this study, low achievers did benefited from the intervention of DI. Therefore, in order to solve the bipolar distribution of students' performance, teachers should consider designing differentiated teaching materials or worksheets to enhance grammar learning, particularly for the low achievers.

5.3 Limitations of the Study

Although the present study has proved the effects of DI on junior high school students' grammar learning, the effects may still be restricted, in that this research is conducted at a rather small scale, only 54 students in total. To be more specific, the three subgroups of 8 to 10 students each appeared to be a small sample size, and thus cautions should be exercised in generalizing from this small-scale study.

In addition to the population issue, an eleven-week period of treatment may also be too short for an effectiveness analysis, even though both the students' learning outcome and their perception of DI are taken into consideration in the current study.

Even the way of conducting the focus group interview may not collect all interviewees' true feelings toward DI, since the host of the interview was the instructor, and the interviewees may be hesitant to express their inner thoughts.

5.4 Suggestions for Future Study

To extend the present research and further investigate the effects of DI, future studies are suggested to probe into the following issues. First, future research may involve a larger population of participants to provide more cases and possibilities for discussion. Second, a longer period of time such as a whole semester to engage the students in the experiment with DI is also likely to help evaluate its effectiveness. Third, the present study embraced the flexible grouping to differentiate the teaching materials. Future studies can adopt different grouping strategies such as interests or learning styles. Last, in order to complete the effectiveness analysis, instructors' thoughts and changes during the process of incorporating DI into their teaching are worthy of being further explored and thus provide an additional perspective as support the practicality.

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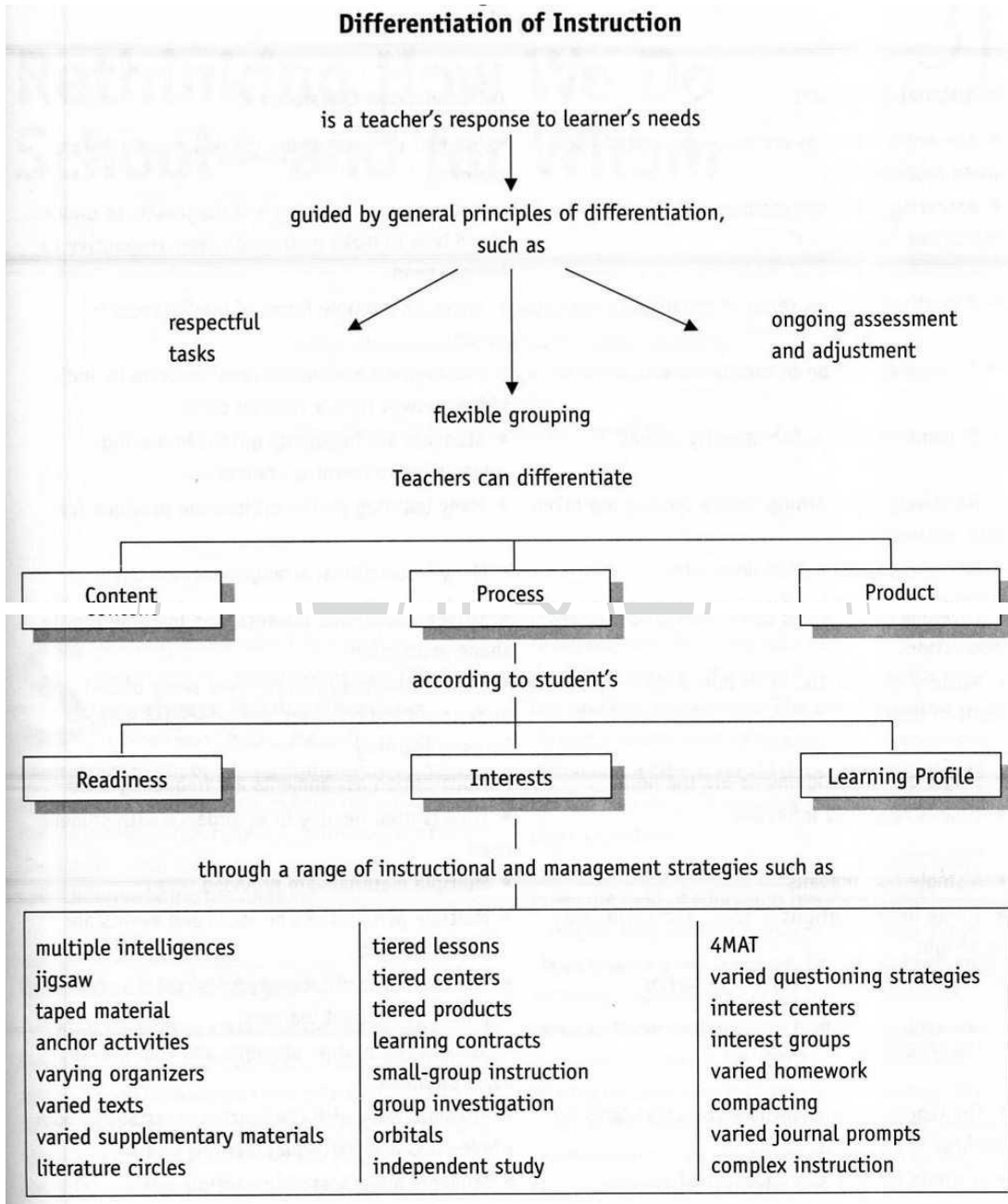
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APPENDICES

Appendix A

Organizer for Thinking about Differentiated Instruction



Adapted from (C. A. Tomlinson (1999)). *The differentiated classroom: Responding to the needs of all learners* Alexandria, VA: ASCD. (p.15)

Appendix B

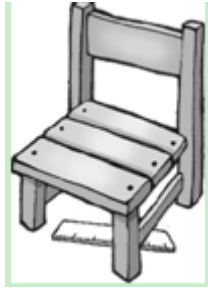
Pretest

English Grammar Test : Starter to Unit 5

Class: _____ Name: _____ No. _____ Score: _____

選擇題：每題都是單選題，請選出一個最適合的答案。每題2分，共60分。

1. () I _____ happy at school.
(A) am (B) are (C) is
2. () Cathy: How old is your older brother? Carol: _____.
(A) She's one year old. (B) I'm twenty-one. (C) He's twenty-one years old.
3. () This is my sister. _____ name is Amy.
(A) She (B) Her (C) His
4. () Jack: Is that your ruler? Lily: No, _____.
(A) that is not (B) it isn't (C) it is
5. () Peter: _____ is your book? Frank: It's in my bag.
(A) Where (B) What (C) How
6. () Tom _____ a student.
(A) am (B) are (C) is
7. () Here are _____ eggs.
(A) one (B) an (C) two
8. () Peter is very smart and _____.
(A) sad (B) hard-working (C) angry
9. () Sandy: _____ is that boy? David: He is Jeff.
(D) Who (E) What (F) How
10. () Look at the picture. The ruler is _____ the chair.



(A) at (B) in (C) under

11. () This dog is little. _____ legs are short.
(A) It (B) Its (C) It's
12. () There are two _____ on the TV set.
(A) cup (B) coke (C) watches
13. () Debby: Mom, is there any juice in the kitchen? Mom: Yes, _____ some.
(A) it is (B) there is (C) there are
14. () May is short. She is a _____.
(A) short girl (B) tall girls (C) short
15. () Aaron: Is there a computer in your room? Eve: No, _____.
(A) it is not (B) there is not (C) there is no
16. () Leo: Is this your mother? Lin: _____.
(A) Yes, she is. (B) Yes, you are. (C) Yes, he is.
17. () Robin: Are there many fans at the game? Mark: _____.
(A) No, they aren't. (B) Yes, they are. (C) Yes, there are.
18. () There are many _____ in the park.
(A) ducks (B) bench (C) tree
19. () David: Is this _____ hat? Sally: Yes, it is. This is my birthday gift.
(A) my (B) her (C) your
20. () Jack: _____ Jill: She is my sister.
(A) Who is that boy? (B) Where is your sister? (C) Who is the girl?

21. () Kelly: Where _____ your pen? Joyce: In my pencil case.
(A) am (B) are (C) is
22. () The air in the country _____ very clear and fresh.
(A) is (B) are (C) am
23. () Adam: There _____ some bread on the table. Ruby: Great. I'm so hungry!
(A) am (B) is (C) are
24. () Alan: How old are you? Emily: _____ twenty-one.
(A) I (B) You're (C) I'm
25. () My _____ hurts, so I can't eat anything now.
(A) teeth (B) tooth (C) hair
26. () Winnie: Is that your pencil? Brian: _____
(A) Yes, it is. (B) Yes, it is my book. (C) No, it is my pencil.
27. () My teacher is from Canada and my friend Peter _____, too.
(A) come from (B) is (C) is from
28. () Martin: _____ any good movies now?
Amy: I have no idea. Let me check the newspaper.
(A) Is it (B) Is there (C) Are there
29. () Where _____ from?
(A) is, your (B) are, his classmate (C) is, her teacher
30. () Chris is _____. He needs some food.
(A) happy (B) thirsty (C) hungry

Appendix C

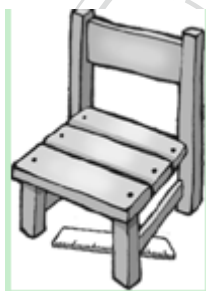
Posttest

English Grammar Test: Starter to Unit 5

Class: _____ Name: _____ No. _____ Score: _____

1-10 為選擇題，請選出一個最適合的答案

1. () Here are _____ eggs.
(A) one (B) an (C) two
2. () Peter is very smart(聰明的) and _____.
(A) sad (B) hard-working (C) angry
3. () Look at the picture. The ruler is _____ the chair.



- (A) at (B) in (C) under
4. () Robin: Are there many fans at the game? Mark: _____
(A) No, they aren't. (B) Yes, they are. (C) Yes, there are.
5. () There are many _____ in the park.
(A) ducks (B) bench (C) tree
6. () The air in the country _____ very clear and fresh.
(A) is (B) are (C) am
7. () My _____ hurts, so I can't eat anything now.
(A) teeth (B) tooth (C) hair
8. () Winnie: Is that your pencil? Brian: _____

(A) Yes, it is. (B) Yes, it is my book. (C) No, it is my pencil.

9. () Martin: _____ any good movies now?

Amy: I have no idea. Let me check the newspaper.

(A) Is it (B) Is there (C) Are there

10. () Chris is _____. He needs some food.

(A) happy (B) thirsty (C) hungry

11-20 為填空題，每個空格不限字數。

11. Adam: There _____ some bread on the table. Ruby: Great.

I'm so hungry!

12. My teacher is from Canada and my friend Peter _____, too.

13. This dog is little. _____ legs are short.

14. Leo: Is this your mother? Lin: Yes, _____.

15. Where _____ your teacher from?

16. Debby: Mom, is there any juice in the kitchen? Mom: Yes,

_____ some.

17. Alan: How old are you? Emily: _____ twenty-one.

18. Peter: _____ is your book? Frank: It's in my bag.

19. Sandy: _____ is that boy? David: He is Jeff.

20. David: Is this _____ hat? Sally: Yes, it is. This is my birthday gift.

21-30 題為翻譯題，請依提示作答。

21. Cathy: How old is your older brother? Carol: 他二十一歲。

Carol: _____

22. Jack: Is that your ruler? Lily: 不，不是。(否定簡答)
Lily: _____
23. Tom 是個學生。

24. Jack: 那位女孩是誰? Jill: She is my sister.
Jack: _____
25. Aaron: Is there a computer in your room?
Eve: 不，沒有。(否定簡答)
Eve: _____
26. Kelly: 你的筆在哪裡? Joyce: In my pencil case.
Kelly: _____
27. 桌上有兩支手表。











28. This is my sister. 她的名字是 Amy。

29. May is short. 她是一個矮的女孩。

30. 我在學校很快樂。











Appendix D

Task for Low Proficiency Learners

1.  A: _____ is she?
B: She is eleven.
(A) How Old (B) Who (C) How old
2.  A: Is it a yellow scooter?
B: No, it isn't. It's _____ scooter.
(A) the red (B) red (C) a red
3.  A: Is _____ young?
(A) he (B) she (C) it
B: No, he isn't. He's _____.
(A) old (B) small (C) heavy
4.  A: Is she a tall girl?
B: .No, she isn't. She is a _____ girl.
(A) strong (B) tall (C) short
5.  A: Is Tina _____?
(A) happy (B) sad (C) full
B: No, she isn't. She is _____.
(A) happy (B) hungry (C) weak
6.  A: Is Miss Lee a beautiful teacher ?
B: _____, she is. She is beautiful.
(A) Yes (B) No (C) Not
7.  A: Is Lisa full?
B: No, she isn't. She is _____.
(A) ugly (B) old (C) hungry
8.  A: How old is your father?
B: He is _____.
(A) three (B) thirty (C) thirteen
9.  A: Is Ben a _____ boy?
B: Yes, he is. He is a _____ boy.
(A) cute (B) ugly (C) weak
10.  A: How old are you?
B: _____ twelve.
(A) You're (B) She's (C) I'm











Appendix E

Task for Intermediate Proficiency Learners

1.  A: _____ is she?
B: She is eleven.
2.  A: Is it a yellow scooter?
B: No, it isn't. It's _____ scooter.
3.  A: Is _____ young?
B: No, he isn't. He's _____.
4.  A: Is she a tall girl?
B: .No, _____.
She is a _____ girl.
5.  A: Is Tina sad ?
B: No, she _____. She is _____.
6.  A: Is Miss Lee a _____ teacher ?
B: _____, she is. She is beautiful.
7.  A: Is Lisa _____ ?
B: No, she isn't. She is _____.
8.  A: _____ your father?
B: He is thirty.
9.  A: Is Ben a cute boy?
B: _____, he _____.
He is a _____ boy.
10.  A: How old are you?
B: _____ twelve.

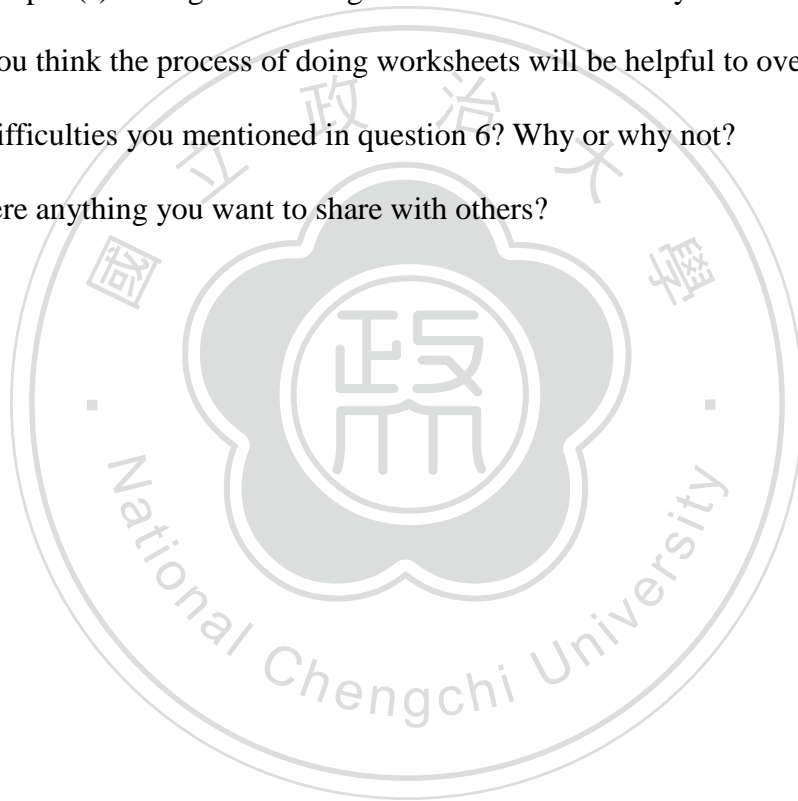
Appendix F

Task for High Proficiency Learners

- | | | | | | |
|----|---|--|-----|---|--|
| 1. |  | <p>A: _____?</p> <p>B: _____.</p> <p style="text-align: center;">(asking age)</p> | 2. |  | <p>A: Is _____?</p> <p>B: _____.</p> <p style="text-align: center;">(negative)</p> |
| 3. |  | <p>A: _____?</p> <p>B: No, he isn't. He's _____.</p> | 4. |  | <p>A: Is _____?</p> <p>B: _____.</p> <p style="text-align: center;">(negative)</p> |
| 5. |  | <p>A: Is _____?</p> <p>B: _____.</p> <p style="text-align: center;">(negative)</p> | 6. |  | <p>A: Is _____?</p> <p>B: _____.</p> <p style="text-align: center;">(positive)</p> |
| 7. |  | <p>A: Is _____?</p> <p>B: _____.</p> <p style="text-align: center;">(negative)</p> | 8. |  | <p>A: _____?</p> <p>B: _____.</p> <p style="text-align: center;">(asking age)</p> |
| 9. |  | <p>A: Is _____?</p> <p>B: _____.</p> <p style="text-align: center;">(positive)</p> | 10. |  | <p>A: _____?</p> <p>B: _____.</p> <p style="text-align: center;">(asking age)</p> |

Appendix G
Focus Group Interview Questions

1. Can you briefly describe the process of grammar learning in English class?
2. Can you keep up with the process? Why or why not?
3. Do you like the process of grammar learning? Why or why not?
4. How do you feel about the worksheets?
5. Do you think the worksheets are helpful for you? Why or why not?
6. Which part(s) of English learning is the most difficult for you?
7. Do you think the process of doing worksheets will be helpful to overcome the difficulties you mentioned in question 6? Why or why not?
8. Is there anything you want to share with others?



Appendix H

Excerpts of Focus Group Interview

"師：你跟得上這樣的學習進度嗎？

H3：跟得上，因為我本身太厲害了！

H4：跟得上，以前有學過。"

"師：你覺得跟得上進度嗎？

I1：跟得上。

師：跟得上的原因是什麼？

I2：因為可以討論。

I3：太簡單了，補習班的比較難。"

"師：那這個流程，你們可以跟得上嗎？

L1：還可以。

師：為什麼可以？

L2：太簡單了！

師：L1，為什麼你覺得可以跟得上？

L1：因為比較可以討論。

L4：你跟我想得一模一樣。

師：L5，你覺得呢？

L5：可以互相交談。

師：互相交談比較可以跟得上進度？

L6：可以互相參考，答案就一樣。"

"師：你喜歡這樣的學習過程嗎？

H5：我不怎麼喜歡，我覺得換位置好麻煩喔。

H6：我不喜歡，因為都沒有討論。

H3：覺得很新奇。

H2：我覺得有好有壞，自己寫進度可以飆超快，但缺點是不能跟同學討論。"

"師：那這樣的學習單對你來說有幫助嗎？為什麼？

L6：有呀！可以增進知識。

L8：有幫助，可以增加印象。

L2：還不錯，可以討論交流一下。

L1：學習單的內容比較可以討論呀，課本都沒有選項。

師：你的意思是學習單上有提供選項可以討論？但課本完全是空白的？

L1：嗯。"

"師：那你覺得這樣的學習單對你有幫助嗎？

I2：可以增加記憶力。

I8：簡單但是可以加深印象。

I4：看到學習單要研究很久才行。

I7：我覺得要學更難的。"

"師：你覺得學習單對你有幫助嗎？

H1：造句的部份能讓我更熟練。

H3：有幫助，因為可以多練習。

H8：沒有比較好，沒有跟同學討論。

H4：沒有什麼差別。

H2：有，因為自己翻字典查，比較沒有進度和速度的壓力。"

"師：你覺得像這樣的分組學習方式可不可以幫助你們克服困難？

L3：可以呀！可以討論句子。

L7：可以呀！交流，有人負責找字。"

"師：像文法課這樣的分組方式可以幫助你克服剛才你提到的困難嗎？

I5：可以呀！

I8：可以互考。

I7：不知道的話可以問旁邊的同學。

I3：一起討論。"

"師：藉由文法課的分組方式可以幫助你解決困難嗎？

H6：應該會比較好。

H2：比較好，因為自己去翻找，會印象比較深刻。

H1：比較好，可以學到比較難的東西。

H3：超好，因為你自己的進度自己弄，然後你弄完了，有時間還可以複習。

H8：希望老師可以用兩個人一組的方式，讓我們練習口說。"

"師：那還有沒有什麼想跟大家分享的？

L4：希望可以到 HPL 組。

L1：我覺得分組比較好，我喜歡留在 LPL 組。"

"師：在分組學習的過程中有沒有什麼想和同學分享的？

I4：我想去 LPL 組。

I3：這樣分組很好呀，可以讓程度差不多的在一起。

I1：平常上課有些同學怕問問題被別人笑，就不敢講話；分組的話實力都差不多，問問題也很正常。而且分組的話只有那幾個人知道你在問問題。"

"師：有其他事情想和同學分享嗎？

H1：如果以程度來說的話，我想在 IPL 組；如果以方式來說的話，我想在 HPL 組，我喜歡一個人學習。

H5：我程度應該是 IPL 組，但討論想到 LPL 組。因為討論是大家都可以一起討論，發表不同意見，不是只有兩個人或只有一個人在那邊想。

H3：我喜歡兩兩討論。

H4：我覺得有沒有分組沒有差別。

H2：我喜歡跟同組的人討論。

H7：我喜歡跟程度差不多的人討論。

H6：我喜歡在這組內，兩兩討論。"