

Exploring the acquisition of English participles by learners of Native speakers of Mandarin Chinese

Huei-Ju Shih

The department of English, National Changhua University of Education, Changhua Taiwan, R.O.C

Abstract: - *The acquisition of English participles could be difficult for EFL learners, especially for those whose native language lacks the similar usage of participles. Explicit instruction of grammar is thought to be advantageous for the learners. This study investigates the acquisition of English participles by the learners of Mandarin Chinese speakers. With different teaching approach: the inductive and the deductive approach as the medium, a total number of 72 students took part in the study. Among them, 37 belonged to the deductive approach group. The other 35 students were in the inductive approach group. A multiple choice test served as the instrument for assessing learners' acquisition of the target structures. The results indicated the deductive approach was better in the instruction. The results showed that the instructional treatment was beneficial to the learners. Results also revealed that the deductive approach could be advantageous for participants across their proficiency levels. As for the duration of the treatment, the results of the delayed posttest suggested that the deductive approach yielded a longer period of duration compared with the inductive approach. Furthermore, results showed that participles in relative clauses were of the greatest difficulty for Chinese learners to acquire.*

I. Introduction

The teaching of grammar has received considerable attention throughout the development of second language acquisition. The evidence of different approaches contributed to different results had been purported (Arteaga, Herschensohn & Gess, 2003; Aski, 2005; Ellis, 1990; Larsen-Freeman, 2003; Lee & Valdman, 2000; Lightbown, 1998; Lightbown & Spada, 1990; Long, 1983; Spada & Lightbown, 1993; VanPattern, 1996). Substantial evidences showed that explicit instruction of focus on form helps develop learners' grammatical competence. For example, Norris and Ortega (2000) investigated 49 studies published between 1980 and 1998. They found that focused L2 instruction made a statistically significant difference compared with simple exposure or meaning-driven communication. The findings in Norris and Ortega (2000) also revealed that treatments associated with an explicit focus on the rule-governed nature of L2 structures were more effective than treatments without such a focus.

With regard to the different types of explicit instructions, most generally discussed were the debates between the inductive approach and the deductive approach. Whether the grammatical rules should be taught before the application of the target structures—the deductive approach, or the grammatical rule should be taught after the learners have been exposed to the use of the target structures – the inductive approach, still remained a main controversy among researchers. With respect to the target structure, the present study focused the

acquisition of the English participles. Owing to the multiple functions of the participles, the acquisition of them become challenging for learners whose native language does not possess similar usages, such as the Mandarin Chinese language. The learners usually meet with confusing situation in which they have to decide which participle—the present or the past one—to choose. Past studies had discussed about the direct object (Erlam, 2003), the active and/or passive voice (Mohammed & Jaber, 2008), possible relationships between gains, preferences and learning styles (Jean & Simard, 2013), and the pragmatic competence (Takimoto, 2008). Nonetheless, there seemed to be few discussions on the participles. The aim of the present study was to explore the differences of different approaches on the learning of English participles in the EFL context among high school learners. One group of the learners adopted the traditional deductive approach. That is, the grammatical rules were presented to the learners and then practices followed the instruction. The other group utilized the inductive approach—to see the examples first and then generate the grammatical rules through discussion with the peers and the instructors. The brief overview of the inductive/ deductive research is discussed below.

The remainder of the paper was structured as follows. Section 1 briefly introduced the background of the study. Section 2 provided a detailed description of the instructional approach being employed to conduct the analysis, together with the research question. Section 3 described the data on which the study was based and elaborated on the methods used in the process of the experiment. Section 4 contained the results of the analysis. In Section 5, the discussion and the conclusion were provided. Pedagogical suggestions were also presented at the section.

II. Literature Review

Both the inductive and deductive approaches are the instances of explicit instruction (Erlam, 2003; Hulstijn, 2005; Norris & Ortega, 2000). But the explicitness is a continuum, with the deductive approach being at the more explicit end and the inductive approach at the less explicit end. The definition of deduction is a process from a general one to a specific one. Generally speaking, in a deductive approach, the analysis of the target structures precedes the practices and exercises (Erlam, 2003; Hammerly, 1975; Larsen-Freeman, 2003). Deductive instruction involves rule explanation coming before the students' engagement in the application of the rules to the practice (Norris & Ortega, 2000). On the other hand, the definition of induction is a process from a specific one to a general one. The language learners are first presented the examples of a target structures and then the rules of the structures emerge from observation or discussion (Decoo, 1996; Gollin, 1998). Norris and Ortega (2000) stress that in inductive instruction, learners directly attend to particular forms and attempt to reach metalinguistic generalizations on their own.

Previous researches on the effectiveness of inductive versus deductive approaches came in very conflicting results (Abraham, 1985; Erlam, 2003; Herron & Tomasello, 1992; Robinson, 1996; Rosa & O'Neill, 1999; Seliger, 1975; Shaffer, 1989). Herron and Tomasello (1992) found an overall preference for inductive approach. Erlam (2003), Robinson (1996), and Seliger (1975), on the other hand, suggested that deductive approach contributes to better performances. However, Rosa and O'Neill (1999) and Shaffer (1989) suggested that there was no significant difference between the two instructional approaches. Compared with the traditional deductive approach, the inductive approach has more variations. In Seliger (1975), the learners had to verbalize the rule after the presentation of the practices, and the grammatical rules were offered by the researcher to the learners at

the end of a lesson. In other studies, (Robinson, 1996; Rosa & O'Neill, 1999; Shaffer, 1989) the learners were guided to identify the rules by themselves during and after presentation and practice. In still other studies (Abraham, 1985; Erlam, 2003; Herron & Tomasello, 1992), the participants were presented contexts with instances of the target structures, but they were not required to point out any rules or look for any patterns.

The diversity of research design contributes to the various results of the previous research. The possible factors relating to the controversy are the target structures, the proficiency levels of the learners, the length of the treatment, the instructional materials, the assessment instruments and so on.

With respect to the target structure—the English participles, it has a lot of functions. For example, it can be an adjective—a *broken* vase. Or, it can be a noun—the *hearing* of an old man. And it also can function as an adverbial—*Seeing* this, the adult ran to the boy's help. Due to the numerous functions and the regular/irregular verbal form of the passive participles, the acquisition of English participles appeared to be even more difficult than other grammatical inflection.

This present study focused on the effects of deductive and inductive instruction on the acquisition of participles in English. The research questions were as follows:

1. Do deductive and inductive instructional treatments lead to different performances on the tests of English participles?
2. Do learners from different proficiency levels perform differently after the deductive/inductive instructional treatments?
3. Do deductive and inductive instructional treatments make a difference in the duration of treatment?
4. Which category of English participles was most easily learned? Which category was acquired with the greatest difficulty?

III. Materials and Methods

3.1 Participants

The study was conducted in one high school in central Taiwan. Two classes of the first year EFL learners, approximately 16 years of age, participated in the study. The students started their formal English instruction at the age of 10, at around their third year of elementary school education. A total number of the participants was 72. Among them, 37 formed the deductive instruction group, and 35 formed the inductive instruction group. Their proficiency was generally above the novice level in the General English Proficiency Test (GEPT), with several of them reaching the intermediate level in GEPT. The English class hours for them were 4 for each week, plus an extra one hour for grammar class. After the pretest, a *t*-test analysis was employed to compare the performance of the participants in both groups. Table 1 showed the means of both the deductive group and the inductive group in the pretest. The mean scores of the deductive group and the inductive group were 55.89 and 55.65, respectively. The results of the pretest ($p=.955>.05$) administered indicated that the participants in both groups did not perform differently before the instruction.

Table 1. The comparison between the deductive group and the inductive group in the pretest

Group	N	Mean	Std Deviation	F	Sig (2-tailed)
deductive group	37	55.89	16.26	1.134	.955
inductive group	35	55.65	18.89		

3.2 Target Structures

The target structures in the present study were the English participles, including the present participles and past participles. On account of the multiple materials and resources, the present study adapted what Cowan (2008) compiled and put the functions of participles into four categories.

3.2.1 Participle in adverbial clauses

Sometimes the main verbs in the adverbial clauses can be substituted with a present participle or a past participle. Participle adverbial clauses are also called “free adjuncts.” The meanings of the clauses can denote time relationships, including concurrent action, or sequential action. They also have other relationships, such as reason, instrumental, and conditional. They can appear at the initial position of a sentence, and they can appear after the main clause.

- (1) Although *insulted* by their words, he tried not to lose temper.
- (2) When *doing* laundry, be sure to put some detergent.

The difference between the present participle and past participle in the adverbial clause is that the former denotes that the subject of the main clause is an agent, while the latter means that the subject in the main clause is a patient.

Cowan (2008) addresses the phenomenon that adverbial clauses that are initiated by while or when and have be plus a present or past participle can be shortened by omitting the subject and be.

- (3) a. While he was *waiting* for the bus, he read the newspaper.
b. While *waiting* for the bus, he read the newspaper.
- (4) a. When he was *asked* to take on a larger teaching load, he refused.
b. When *asked* to take on a larger teaching load, he refused.

(Cowan 2008: 550)

3.2.2 Participle in relative clauses

In a relative clause, sometimes the relative pronoun and a form of *be* may be omitted when they are followed by the following situations.

A present participle

- (5) a. The man *who is standing* over there is my neighbor.
b. The man *standing* over there is my neighbor.

A past participle in a passive sentence

- (6) a. The bills *that were passed* by the House yesterday excited the stock market.

b. The bills *passed by* the House yesterday excited the stock market.

An adjective followed by a prepositional phrase, including past participle adjectives.

(7) a. He is considered to be a genius *who is descended from* heaven.

b. He is considered to be a genius *descended from* heaven.

(Cowan 2008: 431-432)

3.2.3 Tense and Aspects

In tense and aspects, present participles are associated with the progressive meaning, including the present progressive, past progressive, and the future progressive.

(8) He *is singing* a song.

(9) They *were playing* in the park.

(10) They *will be meeting* in the conference room tomorrow.

On the other hand, the past participles are usually connected with the perfective aspect, like the present perfect, past perfect and future perfect.

(11) I *have done* my homework.

(12) She *had finished* her lunch.

(13) We *will have worked* for five hours till 8 o'clock.

Unlike the present participles, the past participles can be used in a passive sentence.

(14) The vase *was broken*.

(15) The thief *got caught* last night.

3.2.4 Adjectives

Apart from carrying verbal meaning, participles can function as adjectives.

(16) a *learned* man,

(17) the *boiled* water,

(18) a *burning* candle ,

(19) a *sleeping* baby

The teaching materials and the test questions would be compiled and categorized into the four categories as many as possible. During the teaching process, the teacher would indicate the target structures and had the learners pay special attention to them. The purpose was for the learners to take special notice of the structures and keep those structures as well as the grammarian principles in mind. Then, no matter which group—the inductive or the deductive group, the learners could get sufficient exposure to the target structures.

3.3 Instructional Treatments

Both groups received an equal amount of instruction—three lessons, each of 45 minutes, spread over three periods of grammar class hours within a week. The instructor, also the researcher, was the same in the two groups.

The materials for instruction were not the traditional textbooks. Because the students might have learned to

read the texts in advance by themselves, using other materials could avoid the factor of familiarity of the texts. Instead, the texts from the supplementary materials, such as bilingual magazines, bilingual newspapers, or series books from English-speaking publishers, were utilized as the teaching materials. The researcher first read and selected passages with enough numbers of the target structures. Then the materials were distributed to the learners in class. The learners were required to read the texts during the class hour.

For the deductive group, the instructor started by introducing the grammatical rules. The teacher would explain the sentence patterns to them and showed them some other examples. Then, the learners had to underline the target structures—the participles, in the text to ensure that they were able to identify the participles. Then they were asked to do some exercises or made sentences by themselves. The sentences would serve as the assignments of the grammar class. They should hand in the assignments after the class was over.

During the whole process of instructional treatment, the learners were allowed to ask the instructor for help or they could discuss with the peers. They could also consult the grammar books if necessary. At the end of each exercise, the researcher would give the correct answers or explain why some student-making sentences were considered incorrect in grammar. Then students should take notes and reviewed the points. At the beginning of the following class hour, the students had to recall and retell what they had had learned in the previous class to ensure that they already put some relevant ideas in mind.

For the inductive group, the teacher would not describe the grammatical rules to them at the beginning of the class period. Instead, the learners read the materials and underlined the target structures—the participles, in the text without knowing the principles behind. The aim was to ensure that they were able to identify the participles. Unlike the deductive group, the explanation of the participles was not presented. After the reading of the supplementary materials, the students immediately began their practice activities. The same examples used in the deductive group were offered to them by the researcher. Then they were asked to do some exercises or make sentences by themselves. They formed small groups to discuss the sentences and to give answers to the exercises. Besides, they needed to generate their own rules from the observation of the examples. During the discussion, the native language was allowed for fear that the learners could not express themselves well in the target language. In the process of discussion, the researcher walked around the learners to offer help and tried to guide them and gave hints. The discussion time would usually last for 15 minutes. And then each group should come to the front to tell the whole class their hypotheses, their reasons and choices. The teacher then judged whether the explanation was correct. For those who correctly and efficiently answered accomplish the task, extra awards (such as notebooks or candies) would be given for encouragement. After students' presentation, then the researcher would give a complete explanation of the target structures. Students in this inductive group anticipated the kind of the process. They tended to view this as a game.

The activities that the participants did could be summed up in the following table.

Table 2. Tasks and steps that the participants required to do

Groups	The deductive group	The inductive group
Step1	The teacher explained the rules.	The learners underlined the target structures.
Step 2	The learners underlined the target structures.	The learners did some exercises or made sentences.
Step 3	The learners did some exercises or made sentences.	The learners performed group discussion for 15 minutes or so.
Step 4	The learners consulted the teacher, peers or the grammar books.	The learners generated the rules and depicting their reasons.

3.4 Testing

The participants completed a pretest a week prior to the beginning of the study. A posttest took place after the procedures of treatments ended. A delayed posttest was administered among the participants three weeks after the posttest. The test questions in the pretest and the posttest as well as in the delay posttest were multiple choice test questions. In order to see if participants in different proficiency levels perform differently, participants in each group were further divided into three proficiency groups—Hi, Mid, and Low, according to their performances in the pretest. Participants who scored above 72 were in the Hi group. Participants who got scores below 52 were at the Low group. And those who scored between 72 and 52 points were at the Mid group. Table 3 described the distribution of the participants. According to Table 3, the Hi level consisted of 8 participants, the Mid level consisted of 14 participants and the Low level, 15 participants in the Deductive group. In the Inductive group, the numbers of the participants in the Hi, Mid and Low groups were 10, 12, and 13, respectively. All of the three tests took place during timetabled class hours, 45 minutes for each test.

Table 3. The distribution of the participants' proficiency level

Deductive Group (N=37)	mean score of the pretest	Inductive Group (N=35)	mean score of the pretest
Hi (N=8)	78.5	Hi (N=10)	77.2
Mid (N= 14)	59.1	Mid (N= 12)	59.7
Low (N=15)	40.8	Low (N=13)	35.4

3.4.1 Multiple-Choice Test Contents

The instruments for the pretest and the posttest as well as the delayed posttest were in the form of multiple choices. The content of the pretest and the posttest was the same. But the test questions in the delayed posttest were different. In all the tests, participants were required to complete the multiple choice test within 45 minutes. The pretest and the posttest consisted of the same version of 25 multiple choice test items. The total score was 100 points, so each test item accounted for 4 points. The delayed posttest consisted of another 25 test items, with the test content somewhat different from those in the pretest and the posttest. The tests were designed to require

students to elicit their knowledge on English participles. The tests were carefully designed for the fear that the participants will infer what the purposes of the tests were. Therefore, the four types of participles reviewed previously were randomly distributed among the test questions.

IV. Results

As table 1 indicated, both groups performed approximately equally before the study. After the instruction, the participants were asked to take the posttest, which was the same as the pretest, to see if any differences emerged. The following table revealed the results of the comparison.

Table 4. The comparison between the deductive group and the inductive group in the posttest

Group	N	Mean	Std Deviation	F	Sig (2-tailed)
deductive group	37	76.04	16.19	3.575	.021**
inductive group	35	67.26	21.74		

From Table 4, the deductive scored a bit higher (76.04) than the inductive group (67.26) in the posttest. The different performance yielded significantly different results in the posttest ($p=.021<.05$). So it was concluded that the deductive approach was more advantageous for the participants.

Then the researcher further moved to see if the instruction made any difference in the performances among all learners across groups.

Table 5. The results of the comparison between the pretest and posttest among all participants ($p=.000$)

Test	N	Mean	Std Deviation	Sig (2-tailed)
pretest	72	55.78	17.47	.000***
posttest	72	65.58	19.02	

Table 5 addressed the results of the comparison between the pretest and the posttest among the performance of all participants. A significant difference was found between the pretest and the posttest ($p=.000<.05$). So the participants did make progress through the instruction.

To investigate whether participants at different proficiency levels yielded different performances, a one-way ANOVA test was conducted to investigate the results. Table 6 revealed that the participants in the deductive group performed differently in the posttest ($p=.000<.05$).

Table 6. Performances of participants from the deductive group at different proficiency levels in the pretest and posttest (**sig at $p<.05$ level)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
post	Between Groups	5862.571	2	2931.286	27.859	.000
	Within Groups	3577.429	34	105.218		
	Total	9440.000	36			
pre	Between Groups	7653.453	2	3826.727	69.722	.000
	Within Groups	1866.114	34	54.886		
	Total	9519.568	36			

Because a significant difference was yielded in the ANOVA test, a further exploration of which level benefited most from the instruction was being carried out. The results of a post hoc test were shown in Table 7.

Table 7. A post hoc test of performances of participants from the deductive group at different proficiency levels in the pretest and posttest. (H=1, M=2, L=3)

Multiple Comparisons

Scheffe

Dependent Variable	(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
post	1.00	2.00	-12.57143*	3.81185	.009	-22.3284	-2.8144
		3.00	-33.50000*	4.49075	.000	-44.9947	-22.0053
	2.00	1.00	12.57143*	3.81185	.009	2.8144	22.3284
		3.00	-20.92857*	4.54620	.000	-32.5652	-9.2919
	3.00	1.00	33.50000*	4.49075	.000	22.0053	44.9947
		2.00	20.92857*	4.54620	.000	9.2919	32.5652
pre	1.00	2.00	-18.34286*	2.75308	.000	-25.3898	-11.2959
		3.00	-37.70000*	3.24342	.000	-46.0020	-29.3980
	2.00	1.00	18.34286*	2.75308	.000	11.2959	25.3898
		3.00	-19.35714*	3.28346	.000	-27.7616	-10.9526
	3.00	1.00	37.70000*	3.24342	.000	29.3980	46.0020
		2.00	19.35714*	3.28346	.000	10.9526	27.7616

*. The mean difference is significant at the .05 level.

Table 7 indicated that in the deductive instruction group, all the three levels, the Hi, the Mid level and the Low level yielded significant differences in the posttest. As for the counterparts in the inductive groups, which proficiency level of the learners advanced most?

The comparison of the performances among different levels in the inductive group in the pre-and post-test was through a one-way ANOVA test. Table 8 depicted the results of the comparison.

Table 8. Performances of participants from the inductive group at different proficiency levels in the pretest and posttest (***sig at $p < .05$ level)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
post	Between Groups	7833.609	2	3916.804	15.227	.000
	Within Groups	8231.077	32	257.221		
	Total	16064.686	34			
pre	Between Groups	10176.542	2	5088.271	82.932	.000
	Within Groups	1963.344	32	61.354		
	Total	12139.886	34			

As what was shown in Table 8, the participants in the inductive group also produced a significant difference in the posttest. So the participants made progress to a certain extent from the instruction. To investigate which level performed most differently, a post hoc test was conducted.

Table 9. A post hoc test of performances of participants from the inductive group at different proficiency levels in the pretest and posttest. (H=1,M=2, L=3)

Multiple Comparisons

Scheffe

Dependent Variable	(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
post	1.00	2.00	-21.61538*	6.42038	.008	-38.0960	-5.1348
		3.00	-36.61538*	6.74599	.000	-53.9318	-19.2990
	2.00	1.00	21.61538*	6.42038	.008	5.1348	38.0960
		3.00	-15.00000	6.86711	.108	-32.6273	2.6273
	3.00	1.00	36.61538*	6.74599	.000	19.2990	53.9318
		2.00	15.00000	6.86711	.108	-2.6273	32.6273
pre	1.00	2.00	-24.28205*	3.13567	.000	-32.3311	-16.2330
		3.00	-41.81538*	3.29470	.000	-50.2726	-33.3582
	2.00	1.00	24.28205*	3.13567	.000	16.2330	32.3311
		3.00	-17.53333*	3.35385	.000	-26.1424	-8.9243
	3.00	1.00	41.81538*	3.29470	.000	33.3582	50.2726
		2.00	17.53333*	3.35385	.000	8.9243	26.1424

*. The mean difference is significant at the .05 level.

According to Table 9, significant differences occurred at the comparison between the Hi-Mid levels ($p=.008<.05$) and Hi-Low levels ($p=.000<.05$). Nonetheless, no significant difference occurred at the comparison between the Mid-Low levels ($p=.108>.05$).

To answer research question 3, the results of the delayed posttest from the two groups were evaluated. The result of the comparison between the two groups in the delayed posttest was shown in Table 10.

Table 10. The Comparison of the results between the deductive group and the inductive group in the delayed posttest among all participants ($p=.001<.05$)

Group	N	Mean	Std Deviation	Sig (2-tailed)
the deductive group	37	70.51	11.47	.001**
the inductive group	35	58.91	16.67	

As Table 10 indicated, in the delayed posttest, the deductive group got a mean score 70.51 and the inductive group scored 58.91. The result indicated that the deductive group significantly outperformed the inductive group ($p=.001<.05$). In terms of the fourth research question, degree of difficulty in acquiring the English participles, the frequency of errors from the four categories was calculated. The higher the frequency was, the more errors were made. Participle in adverbial clauses, participle in relative clauses, Tense and aspects and adjectives were the four categories under evaluation. Table 11 expressed the error frequency of each category.

Table 11. Error frequency from the four categories of English participles

participle in adverbial clauses	35%
participle in relative clauses	57%
tense and aspect	15%
Adjective	6%

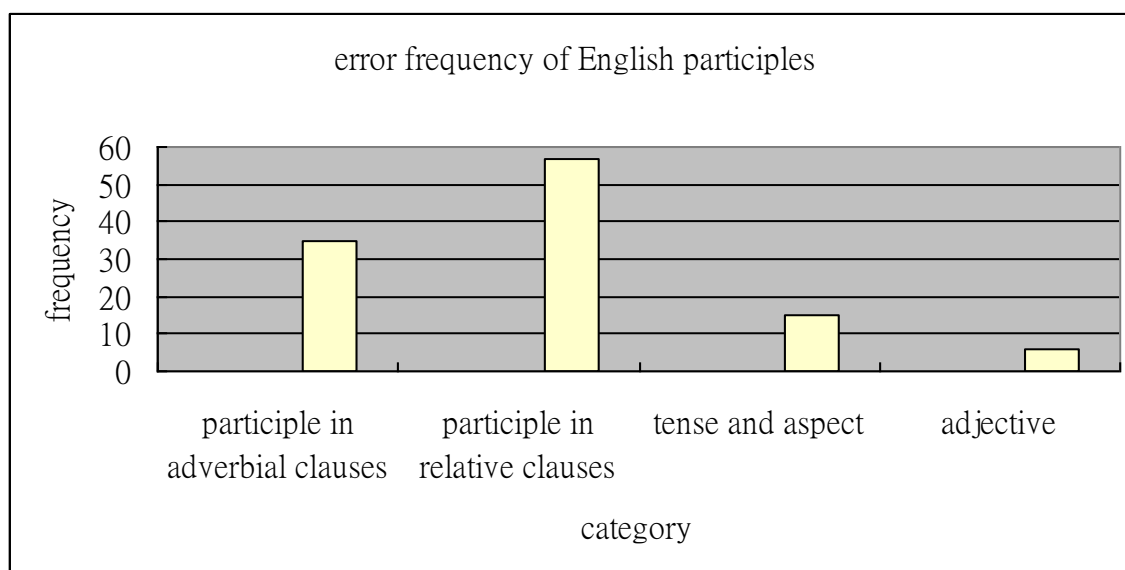


Figure 1. Error frequency from the four categories of English participles

According to Table 11, the learners made more errors, accounting for 57%, in participle in relative clauses than any other three categories. The least number of error made appeared in the adjective category. The frequency of error made was 6%. As for participle in adverbial clauses, the error frequency was 35%. And in the category of tense and aspect, the learners made 15% errors.

V. Discussion and Conclusion

According to Table 1, the learners in both groups performed equally before the treatment. After the treatment, learners in both groups made progress, which was shown in Table 4, the differences did reach the significant level. Therefore, it was deductive approach that could benefit the learners more. Moreover, if the learners were viewed as a whole group and their performance before and after the treatment was compared, the different performance did yield a significant level, which was shown in Table 5. That is, the instruction did help the learners in the acquisition of English participles. In other words, both of the teaching methods were good for the learners. However, in the Asian context, where the learners tend to trust the authorities, the deductive approach seemed to be more effective. The learners tend to feel a sense of security if the teacher guided them with specific principles depicted first. For the Asian learners, generating the rules by themselves and then being shown the principles later seemed to confuse them more. Learners still needed more time in the process of acquiring a certain grammatical item.

As for which proficiency level of the learners could learn better, Table 6 through Table 9 revealed that the three levels in the deductive group produced significant differences. The results indicated that learners who received the deductive instruction might make progress in the target structures. All the participants in this deductive group benefited from the treatment and performed better after the instruction. To sum up, the deductive approach was advantageous for the learners. On the other hand, the learners in the inductive group did not perform so well. The participants in the Mid and the Low levels in the inductive group, though making progress, did not yield significant difference in the posttest. It was only the Hi level that produced differences and reached the significant level. For the participants in the inductive approach, only the learners in the Hi level benefited from the instruction. For those in the Mid and Low levels, the instruction seemed to be ineffective. The reason might be due to their low proficiency. In the learning process, the learners could not understand the target structures and get a full understanding. The kind of learners might need more training before the employment of the inductive approach. For the deductive group, the proficiency level seems to be a factor determining the correct use of participles. The proficiency level in the inductive group, though only the Hi group yielded significant differences, still could explain the act that learners' performances varied across different levels.

In terms of the duration of the instructional effect, the result suggested that EFL learners who received grammar instruction with the deductive approach yielded longer duration than those who received instruction with inductive approach. The deductive group got an average score of 70.51, while the inductive group got a score of 58.91. The rapid decline of score in the inductive group indicated that the effect of instruction could not stay longer than that of the deductive group. The reason might be that the English participles were more marked compared with other grammarian rules. For the learners of Mandarin Chinese, the acquisition of English participles would take longer exposure and the teacher's guide. The elaborate description of the rules seemed to function better in assisting the learners to acquire the marked structures. Participants in the inductive group though received instruction after generating the rules, the transferring the short term memory into the long term memory did not seem to succeed.

As for the degree of difficulty of acquiring the participles from the four categories, Table 11 and Figure 1

revealed that the second category—the participles in relative clauses possessed the highest degree of difficulty, the participle in adverbial clauses came the second, the participles denoted tense and aspect came the third, and participles functioned as adjectives seemed to be most easily acquired. The reason might be that relative clauses were marked for the learners with Mandarin Chinese as the mother tongue. Moreover, the participles were also thought of as being marked. Therefore, the acquisition of the participles in relative clauses appeared to be most difficult. In contrast, the principles of participles functioned as adjectives could be easily learned and memorized. The reason might be that adjectives in the Mandarin Chinese were also in the pre-nominal position. And the rules—the present participles were used to modify the non-personal items while the passive participles were used to modify the human beings—were clear and easy to remember. The learners did not have to cram so much knowledge as the other three categories. For the participants, there seemed to be the least difficult in acquiring the rules.

In conclusion, the present study aimed at investigating the effect of two different approaches—the deductive approach and the inductive approach—on the acquisition of English participles by the learners whose native language was Mandarin Chinese. Despite the fact that the participants in the deductive group and those in the inductive group made some improvement in their posttest, the ones in the deductive group seemed to make greater progress. This echoed what Erlam (2003), Robinson (1996), and Seliger (1975) suggested that deductive approach contributes to better performances. Furthermore, if the participants were seen as a whole, then the participants did yield a significant difference after the treatment. Therefore, the teaching of grammar did benefit the learners, whatever the approach was.

If participants' proficiency levels were taken into account, the results revealed the participants from all three levels in the deductive approach group made significant improvement after the treatment. On the other hand, in the inductive approach group, only the learners at the Hi level found it advantageous. Both the Mid level and the Low level did not yield significant improving results. Therefore, for the effect of instruction, the deductive approach helped the learners more than the inductive approach. And the proficiency level of the learners seemed to account for the different performances. As for the duration of the teaching effects, the learners employing the deductive approach seemed to yield longer duration, as was shown in the delayed posttest. The inductive instructional treatments made an insignificant difference in the duration of treatment, instead. With respect to the difficulty of acquiring the English participles for the participants, the test results showed that the participles in relative clauses were of the greatest difficulty to be learned. This indicated that learners of Mandarin Chinese met with more trouble in acquiring the participles in relative clauses than in other types of participles. A limitation of the present study was the test instrument. Since different test instrument would elicit different knowledge, different test measurements should be used in the future to see if other valuable findings emerged. A second limitation is that the types of participles, such as participles as noun, were not under exploration in the study. For those who are interested in investigating participles, these types of participles are recommended to be taken into consideration.

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