ผลของการสอนแบบชัดแจ้งในการเรียนรู้คุณานุประโยคภาษาอังกฤษสำหรับนิสิตชาวไทย

The Effects of Explicit Instruction on English Relative Clauses

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บทคัดย่อ

      ผู้เรียนชาวไทยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศมักจะประสบปัญหาใน การสร้างคุณานุประโยคในภาษาอังกฤษ จากงานวิจัยที่เกี่ยวข้องมักจะระบุว่าปัญหาการสร้าง คุณานุประโยคในภาษาอังกฤษ (English Relative Clause–ERC) เป็นปัญหาในเรื่องของ วากยสัมพันธ์ (syntactic structure) ดังนั้น งานวิจัยนี้จึงมีวัตถุประสงค์ (1) เพื่อที่จะแก้ปัญหา การสร้างคุณานุประโยคในภาษาอังกฤษที่ผิดพลาดโดยการใช้วิธีการสอนแบบแจ้งชัด (Explicit Instruction) (2) ทดสอบสมมุติฐานตามแนวคิดลำดับนามวลี (the Noun Phrase Accessibility Hierarchy –NPAH) ที่กล่าวว่าโครงสร้างประพันธสรรพนามประธานคุณานุประโยค (Subject ERC) นั้นง่ายที่สุดและโครงสร้างประพันธสรรพนามแสดงความเป็นเจ้าของคุณานุประโยค (Genitive ERC) นั้นยากสำหรับผู้เรียนในระดับมหาวิทยาลัยที่เป็นชาวไทย โดยในการวิจัยนี้ ผู้เข้าร่วมงานวิจัยจำนวน 22 คนใช้เวลา 4 สัปดาห์ในการเรียนคุณานุประโยคภาษาอังกฤษ ERCs ผ่านการสอนโดยวิธีการสอนแบบชัดแจ้ง (Explicit instruction) ผลจากการทดลองหลังการเรียน พบว่าผู้เข้าร่วมวิจัยสามารถสร้างประโยคที่มีโครงสร้างแบบ ERCs ได้ดีขึ้น จากการทำ

แบบทดสอบการรวมประโยคและและแบบทดสอบการแปล โดยมีนัยสำคัญที่แตกต่างทางสถิติ
ทั้งสองแบบทดสอบ อย่างไรก็ตามความสามารถในการสร้างโครงสร้างประโยคแบบ ERCs ไม่ได้
เป็นไปตาม NPAH ในทุกกรณี งานวิจัยนี้พบว่าโครงสร้างประธานประพันธสรรพนาม
คุณานุประโยค (Subject ERC) นั้นเรียนรู้ได้ง่ายที่สุด ในส่วนของโครงสร้างประพันธสรรพนาม
กรรมคุณานุประโยค (Object ERC) และโครงสร้างประพันธสรรพนามแสดงความเป็นเจ้าของ
คุณานุประโยค (Genitive ERC) นั้น ซึ่งถือว่าเป็นโครงสร้างที่ยากที่สุด พบว่าผู้เรียนทำคะแนนได้
ดีกว่าในโครงสร้างประพันธสรรพนามกรรมคุณานุประโยค ในแบบทดสอบการรวมประโยค
แต่ในแบบทดสอบการแปล ผู้เรียนทำคะแนนในโครงสร้างประพันธสรรพนามกรรม
คุณานุประโยคได้ดีกว่าโครงสร้างประพันธสรรพนามแสดงความเป็นเจ้าของคุณานุประโยค

คำสำคัญ: คุณานุประโยคภาษาอังกฤษ แนวคิดลำดับนามวลี ผู้เรียนชาวไทยที่เรียน
ภาษาอังกฤษเป็นภาษาต่างประเทศ

Abstract

English relative clauses (ERCs) seem to be a problem for Thai EFL (English as a Foreign Language) learners. Literature always mentions ERCs as a part of syntactic problems. Thus, this study aims to solve this problem through a teaching model called explicit instruction. Another objective of the study is to what extent the university performance fits the Noun Phrase Accessibility Hierarchy (NPAH) in that Subject ERC is the easiest form and Genitive ERC is the more difficult one. Twenty–two English–major education students spent four weeks learning ERCs through the explicit instruction. The findings show that students performed better in a sentence combining test and a translation task; statistically significant difference was found in both tests. Nonetheless, their performance did not fit the NPAH in all cases. The Subject ERC became the easiest form to acquire, but the Object and Genitive ERCs show inconsistent results from the sentence combining test and the translation task.   That is, students performed Genitive ERC better than the Object ERC, but in the translation task, student had higher score in Object ERC than Genitive ERC.

Keywords: English Relative Clauses, The Noun Phrase Accessibility Hierarchy, Thai EFL Learners

Rationale of the study

A number of Thai scholars posit that English grammar becomes an up-hill task for many Thai students.   For example, Thep-Ackrapong (2009) mentions that English grammar is one of the Thai learners' problems. She found that most widely found grammar errors by Thai students were: subject-verb agreement, topic-comment structure, passive voice, participial phrase, relative clause and subordination. Intaraprapong (2013) claims that complex sentences pose some difficulty to the students because they cannot identify between a main clause and a subordinate clause. In the complex sentences, English relative clauses (ERCs) are always on a list of a syntactic error category by Thai university students (Promsupa, Varasarin & Brudhiprabha 2017; Waelateh, Boonsuk, Ambele & Jeharsae 2019).

Based on the researchers' teaching experience when students were assigned to write essays or paragraphs, among other grammar errors the researchers found that many students used inaccurate types of English relative clauses (ERCs) to convey their thoughts. For example, *That is the man whom helped me last night.* The students were supposed to use the subject relative clause with "who" as a relative pronoun. The ERC problems were found in not only high school students but also university students. To be more precise, when they were assigned to do either a paragraph writing or an essay writing, they used adjective clauses in the wrong form. Worst, during the writing conferences, as a part of the writing course, many of them claimed that they had used ERCs correctly. Needless to say, this problem requires an urgent attention and solution to better students' writing performance. This issue should not be overlooked when ERCs are widely found in many sources such as newspapers, textbooks, novels, etc. Specifically, one of the previous studies confirms this phenomenon. That is, Nangkitjawat (2013) conducted a study through university academic textbooks from three major clusters (Humanities and Social Science, Science and Technology, and Medical Science); she found that ERC structure was the most frequently used one when compared to the other two types of complex sentence structures, namely noun clauses and adverb clauses. Nangkitjawat posits that ERCs not only define or identify the things that the writer is talking about, but they also make the readers understand the contents more easily and clearly. Thus, ERCs play a significant role in an academic area.

The classroom problems and the most frequent use of ERC in academic textbooks had inspired the researchers to conduct the present study.

The next question is in what way the instructors could help the students out since there were a lot of teaching practices or approaches. In other words, why was an explicit instruction chosen as a treatment to solve the problem? For one reason, this teaching method has a number of strengths such as a series of carefully sequenced steps to follow, student engagement practice, immediate corrective feedback, etc. More details will be discussed in the literature review section. For another, only one study by Thai scholar has employed the explicit instruction to teach Thai students. That is, Chaiyapho (2017) used the explicit instruction to teach noun clauses to university students. The other reason is from past to present, ERCs have been studied by many Thai scholars, but not much research related to ERC teaching exists. In addition, this study goes beyond only a teaching method, but linguistic perspective framework was employed to investigate students' performance before and after the teaching treatment. That is, before and after the treatment how their performance was compatible with the Markedness Theory, namely the Noun Phrase Accessibility Hierarchy (NPAH), to find out whether one structure is truly easy to learn than the others. If "yes", what can be the reasons behind this linguistic phenomenon.

Research questions

1. To what extent does the explicit instruction improve ERC performance?

2. Before and after the explicit instruction, do Thai EFL learners' performance still follow the Noun Phrase Accessibility Hierarchy (NPAH)?

Literature Review

Explicit Instruction

Archer and Hughes (2011) define an explicit instruction as a systematic, direct, engaging, and success-oriented instruction with three major stages–*I do it, We do it*, and *You do it*. That is, teachers have initially a high involvement. Once students begin to show a better sign of performance; teacher's support is gradually withdrawn. Finally, students

perform independently. Its name might mislead people to understand that this type of method promotes teacher-centered approach, which teachers are the main source of information and students needs to follow the teachers' rules and directions, and require a large amount of memorization and rote-learning practice. In fact, all teaching materials and instructional decisions are based on students and performance not on a rigid adherence to "teacher-centered" techniques (2011: 19). The strength of this instruction is this teaching method is suitable for difficult contents or those that the learners cannot discover. It is called an explicit instruction because it is an unambiguous and direct approach to teaching; in addition, both instructional design and delivery procedures are in clear descriptions and demonstration. To be more precise,

"Explicit instruction is characterized by a series of supports or scaffolds, whereby students are guided through the learning process with clear statements about the purpose and rationale for learning the new skill, clear explanations and demonstrations of the instructional target, and supported practice with feedback until independent mastery has been achieved" (p.1).

Archer and Hughes claim that without explicit input how the learners discover the following issues.

- the sound associated with a letter;
- the quantity associated with a number;
- the steps in an efficient math algorithm;
- the order of operations in algebra;
- the process for sounding out words;
- the construction of a persuasive essay;
- the elements in scientific inquiry;
- a spelling rule for dropping the finale (2011: VII)

It is true that there are a number of teaching methods to better students' language performance. However, for grammar teaching, the explicit method seems to be an effective alternative to help students discover significant grammar points or they may discover them inaccurately, inadequately, or even inefficiently. The explicit instruction as an intensive intervention can be employed to promote students' achievement gains.

Teaching Practice in Action

In the present study, the researchers employed five steps of teaching based on three major stages–*I do it, We do it*, and *You do it.* Below are our five-step teaching plan.

1. Introduction

- Review basic skills and knowledge before getting into the main contents.

2. Presentation (*I do it*)

- State the lesson goals.

- Present forms and function of target relative clause (such as subject relative clause) with small steps to combine two simple sentences into one complex sentence.

- Emphasize certain points that the students should pay special attention such as relative pronouns (who, whom, whose).

- Use simple language/avoid technical terms.

3. Guided practice (*We do it*)

- Have students practice combine sentences to construct new sentences with relative clause by either making new sentences in the front class or doing with classmates.

- Provide feedback and comments.

- Provide Thai sentences and let the students translate them into English with relative clause structure.

- Allow students to more practice until they are fluent under the instructor's supervision.

4. Students' actions (*You do it*)

- Distribute handouts to have students do the exercise individually.
- Walk around the classroom to ensure that students can do the exercise.

5. Wrap–up

- Have students summarize what they learn today to ensure that they understand target relative clause type in terms of forms and functions. They could express their difficulty and concerns and what they should do after class.

Adopted from Archer & Hughes (2011: 4)

In conclusion, the explicit instruction requires a teacher to select the important information to teach and then break down information into pieces. To do these, the three major steps are employed–*I do it, We do it, and You do it*. The learners not only learn from the teachers, but they practice what they are taught in the classroom. Not surprisingly, a number of researchers have employed the explicit instruction to teach students in classroom. Most findings show impressive results, particularly when dealing with complex sentences (Andrews, 2007; Chaiyapho, 2017; Nezakat–Alhossaini, Youhanaee, Moinzadeh, 2014).

Theoretical Framework

Markedness Theory is the major current study's framework. In general, the notion of markedness originated from Roman Jakobson and Nikolai Trubetzkoy, the founders of the Prague school of phonology (Gurevich, 2001). The theory was initially used to explain the language sounds to identify the binary opposition between marked and unmarked forms. That is, unmarked sounds are general, less complex, and widely found. The marked ones are difficult, more complex, and rare. Later, this binary symmetry was used in many areas such as syntax, pragmatics, semantics, morphology, and language acquisition.

 To make this theory tangible and applicable to the current study, the Noun Phrase Accessibility Hierarchy (NPAH) was employed to do the data analysis.

Conceptual Framework

NPAH

The Noun Phrase Accessibility Hierarchy (NPAH) by Keenan and Comrie (1977) deals with relative clauses (RC) in many languages around the world. Their work broke new ground because many studies related to this concept have been conducted since then. Their concept proposes that not all types of RC are accessible equally. In other words, some types of RC are more accessible than the others. That means one types can be more marked than others. How does this matter to learners? The easiest type to access or the unmarked form takes less time to learn than the marked forms. Keenan and Comrie introduced an accessibility hierarchy scale as below. It should be noted that the symbol ">" indicates "to be more accessible than ...". In other words, ">" means "easier to relativize", or "easier to acquire".

SU > DO > IO > OBL > GEN > OCOMP

Unmarked———————————————————>Marked

Unmarked	SU	Subject	That is Tom [who gave me a book].
	DO	Direct object	That is Tom [whom I met yesterday].
	IO	Indirect object	That is Tom [whom I gave a book to].
	OBL (OP)	Oblique (or object–of preposition)	That is Tom [with whom I had a flight].
	GEN	Genitive	That is Tom [whose wife is a nurse].
Marked	OCOMP	Object of–comparative	That is Tom [whom I am taller than].

(adopted from Keenan & Comrie, 1977)

Figure 1: English relativization types

Based on the hierarchy scale, the left–hand forms are easier to revitalize and widely found than those on the right hand. To be more precise, a subject RC is easier form to revitalize than a direct object RC. By the same token, a direct object RC is earlier formed to revitalize learn than an indirect object RC. Notice that the level of markedness goes up from left to right on the scale. As a result, an object of comparative RC is the most marked form and the most difficult one to revitalize. Thus, the higher the grammatical relation is on the hierarchy scale, the easier it is for that syntactic position to relativize or access by the leaners in both within a language and across languages.

Based on NPAH, the researchers combined DO, IO, and OBL together as a DO. However, the hierarchy scale was still the same as that in the NPAH in the sense that SU is the most accessible among the three; DO is more accessible than the genitive "whose". Thus, the ranking was: SU > DO > GEN. However, in this study, we used Subject > Object > Genitive to represent the ranking to be compatible with the NPAH framework.

Previous Studies

Relative Clauses in Other Languages

Relative clauses have been studied from past to present. Interestingly, this topic was become a major topic in a special issue of a well–known journal named *Studies in Second Language Acquisition* in June 2007, Volume. 29, No. 2 by Cambridge University Press. It is true that relative clause structures are found in a number of languages. Not surprisingly, relative clauses on different language studies were conducted. To be more specific, Kanno (2007) on Japanese relative clauses; Renaud (2011) on French relative clauses; Yi (2011) and Wen (2020) on Chinese relative clauses; Lee and Lee (2012) on Korean relative clauses; Caponigro and Pear (2009) on Italian relative clauses, to name a few. In addition, L2 acquisition on ERCs is also widely found. Some of them are: Alroudhan (2016) on Arabic speakers; Madsen (2016) on Danish speakers; Lin and Chuang (2014) on Chinese speakers; Yas (2012) on German and Turkish speakers; to name but a few.

Relative Clauses and NPAH

To narrow down to the studies based on the Noun Phrase Accessibility framework, it is found that the NPAH has been employed in many studies. To illustrate, Xu (2011) carried out a study with native speakers of English who learned Chinese as a foreign language (CFL) to complete a sentence combining test. The objective was to examine whether the accessibility hierarchy in Chinese Relative Clauses followed the NPAH or not. The focus was placed on only four types of relative clauses namely, Subject, Direct Object, Indirect Object, and Object of Preposition. The findings revealed that the participants performed better in Subject and Direct Object RC than the Indirect Object and Object of Preposition RCs used pronouns with the lower position on the NPAH. Another study on Japanese based on the NPAH was conducted by Ozeki and Shirai (2007). They employed two instruments to elicit Japanese RC from L1 Chinese, English, Korean, and Cantonese speakers. The findings from the oral interview and the sentence combing test made no difference in the sense that Subject RC was not easier than Direct Object and Oblique RCs even the low proficiency group still performed the two forms better than the Subject RC. In 2008, Choi and Kim conducted a study with a group of university students and a group of primary school students; both groups were Korean EFL students. The three instruments were employed to elicit their acquisition; they were a sentence combining test, a computerized reading comprehension test, and a sentence combining test checking animacy effects. The focus was on Subject, Object, and Oblique ERC. The results were consistent with the predictions made by the NPAH. They summarized that the NPAH had an impact on Korean learners' acquisition of ERCs. The other study was done by Şavran (2022), who had Turkish EFL learners at pre-intermediate level and Turkish EFL learners at upper-intermediate level (50 in total) do a grammaticality judgment test and a sentence combining task. The findings show that only Turkish pre-intermediate EFL learners followed the Noun Phrase Accessibility Hierarchy (NPAH) only in sentence combining task. All other results revealed that Turkish EFL learners did not follow the NPAH. So, the inconsistent results from literature provide a room for more studies to expand.

Relative Clauses by Thai Scholars

In terms of relative clauses by Thai researchers, the focus was on either English or Thai relative clauses. To illustrate, Phoocharoensil (2009) carried out an extensive study on English relative clauses by Thai speakers based on two theoretical frameworks (NPAH and Perceptual Difficulty Hypothesis or PDH). The results from two groups of university participants (high and low language competence) conformed to the two theories in the sense that subject relative clause was employed the most and genitive was found the least. Based on the PDH, ended structure was more widely used when compared to the center–embedded structure. In the following year, Phoolcharoensil and Simargool (2010) paid a special attention to ERC and learners' problems related to the four learning strategies: first language transfer, transfer of training, avoidance, and overgeneralization. The findings showed that Thai university students from high and low language competence groups had problems resulting from all four learning strategies. However, in avoidance strategy, low language competent group employed it more than the counterpart. Phoolcharoensil (2012) extended his study on adverbial relative clauses (ARCs) introduced by a relativiser 'Where' and object–of–prepositional relatives (or OPREP). It was found that the frequent problems with 'where' were 'where' as a relative pronoun in a subject position of relative clauses, preposition addition, the existence of resumptive pronouns/NP, a substitution of 'that' for 'where', etc. Phoolcharoensil, to a larger or less extent, seemed to employ NPAH as his major theory except his work in 2010. Another work from Phoolcharoensil was conducted in 2015 when he paid a special attention to a relativizer 'That' through a corpus study. It was found that the use of resumptive pronouns posed the most difficulty. The NPAH was also employed and confirmed that the subject relative clause was the easiest and the genitive RC was the most difficult one. It can be noted that Phoolcharoensil was the most productive Thai scholar on ERC with more ERC research studies than others. Likewise, Ratanasak (2014) employed a sentence combination task and a translation task to high school students to find out whether NPAH and PDH held true or not. The findings reveal that NPAH except GEN was applicable and PDH was confirmed. Another study that employed NPAH and PDH as theoretical frameworks is from Amornwongpeeti and Pongpairoj (2014). Unlike previous

studies, their focus was placed not only on restrictive relative clause (RRC), but also on non-restrictive relative clause acquisition (NRRC). The results showed that NPAH worked well with RRC and NRRC. On the other hand, the PDH fitted the RRCs but not NRRCs because the prototypes of the two types of ERC were different. In addition, students had more struggle to acquire NRRCs than RRCs. Surprisingly, the only Thai scholar who employed PDH extensively in the study was Nuamthanom Kimura (2015). She examined whether university students followed PDH concept. That is, ended-structure relative clauses would be easier than center-embedded ones. The findings conformed with the theory and revealed that incorrect, incomplete, deviant answers were related to the center-embedded ones. It had an impact on their memory to hold in the information when students suffered from the center-embedded structure than the counterpart. Besides linguistic perspective and SLA, Thai scholars examined translation of relative clauses from English into Thai. Leenakitti and Pongpairoj (2019) focused attention on English relative clauses with the relativizers 'who','which', and 'that' based on Chesterman's (1997) translation strategies. Two major strategies were employed. One was literal translation and the other was translation adjustment. Four Thai relativizers were found: /t^{h}i /, /siη/, /p^{h}u /, and /p^{h}usiη/.

After going through literature, we found that no literature employed teaching approaches to better Thai learners' performance on ERCs. As mentioned earlier, ERCs are one of the problematic areas that have been widely found in both high schools and universities. Helping students through a teaching approach could be a possible way to solve the problem. As a result, this study would fill the gap by examining how explicit instruction could improve Thai learners on ERC and explore to what extent Thai EFL learners' performance still followed the NPAH and PDH before and after the explicit instruction.

Methodology

Participants

Twenty-three English-major education students took part in the study in the second semester of 2020 academic year. They were fourth year students, and they had never had overseas experience to use the English language.

Research Tools

Two major research tools were employed. One is a sentence combining test; the other is a translation task.

First, the sentence combining test was designed to elicit ERCs students' understanding. The students had to combine two sentences together to form a new complete sentence. They were informed to set one sentence on the left as an independent clause or main clause; the other on the right must be a dependent clause, specifically an adjectival clause. To ensure that they understood where ERCs were located, the students had to underline the adjectival structure and circle the head noun the ERCs modified. Below is an example from the test.

He likes his co-workers. They work in his office.

An expected new sentence is: He likes his co-workers who work in his office.

The total items were 12 with two sentences in each item. The 12 items questions covered three major structures, namely subject, object, and genitive relative clauses. See appendix for more details. It took 20 minutes to complete this task.

Second, the translation task was aimed to elicit the participants' knowledge and converted from their native Thai language into English. Again, after translating the assigned item, they had to underline ERCs and circle the head noun to ensure that the new sentence must have an ERC structure. Here is a sample item from the test.

ฉันชอบเรียงความที่คุณเขียน

An expected new sentence is: I like the essay that you wrote.

The total number of items was 12. The students spent 20 minutes completing the task. It should be noted that all items in both sentence combining test and translation task consisted of three types of ERCs, namely subject, object, and genitive.

Research Validity and Reliability

To establish a content validity in research tools, specifically a sentence combination test and a translation task, two measures were done. First, both tools were checked by three experts to ensure that the test and translation task fitted research objectives, research questions, and research title. To be more precise, the three experts were university instructors. One held a degree in language teaching; the other two had a degree in linguistics. They employed a table of IOC (Index of Item–Objective Congruence) to examine all items on the test and the tasks. If any item had an average score over 0.5, it would be on the test. If its score was lower than 0.5, that item would be replaced by a better one.

Then, to ensure that the participants clearly understood the items and the items could elicit students' language performance, a pilot study was carried out through the fourth-year students from another university. It should be noted that all instructions to do the test and the task were in Thai, students' mother language, to guarantee that the students knew what they had to do on the test.

In terms of lesson plan, two experts (one from English Education Department; the other from English Department) were asked to look through and comments on all four lesson plans.
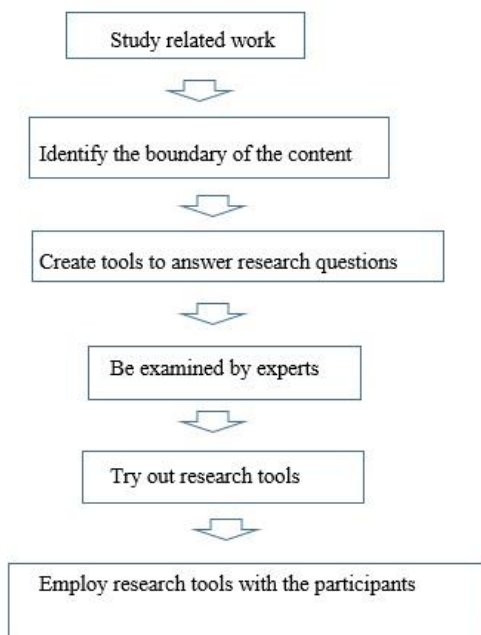
Research tool development procedure

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┌─────────────────────────────────────┐
│          Study related work          │
└─────────────────────────────────────┘
                   ⇩
┌─────────────────────────────────────┐
│   Identify the boundary of the content │
└─────────────────────────────────────┘
                   ⇩
┌─────────────────────────────────────┐
│  Create tools to answer research questions │
└─────────────────────────────────────┘
                   ⇩
┌─────────────────────────────────────┐
│        Be examined by experts         │
└─────────────────────────────────────┘
                   ⇩
┌─────────────────────────────────────┐
│         Try out research tools        │
└─────────────────────────────────────┘
                   ⇩
┌─────────────────────────────────────┐
│ Employ research tools with the participants │
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Figure 2: Research tool development procedure

Data Collection Process

The data collection steps are as follows.

1. The participants did the pretests from both a sentence combining test and a translation task. All participants sat in the same room and spent the first 20 minutes doing the sentence combining test. Then, after completing the first test, they did the translation task.

2. In the following week, the participants took part in the explicit instruction on ERC. One of the researchers ran the teaching class in four weeks to finish all three major ERCs. The first week covered subject ERCs. The second week dealt with object ERCs. The third week was genitive ERCs. The final week was the wrap–up session.

3. After the teacher went over the three major types of ERC in the final week, the posttests were immediately launched to the participants. In other words, the posttest and the wrap-up session were conducted on the same day.

4. After all research instruments were employed to collect the data, the researchers conducted a statistical data analysis through a computer package from the two tests to find statistically significant difference (t-test and F-test).

Table 1: A summary of data collection and data analysis

Research questions	Research tools	Statistical data analysis
1. To what extent does the explicit instruction improve ERC performance?	1. sentence combining test 2. translation task	t-test
2. Before and after the explicit instruction, do Thai EFL learners' performance still follow the Noun Phrase Accessibility Hierarchy (NPAH)?		t-test, F-test

Results

The findings answer two major research questions as follows. First research question: *To what extent does the explicit instruction improve ERC performance?*

Before finding statistical results, the test of normality, specifically Shapiro–Wilk test, was run to ensure the distribution of the data (or the participants' scores in this case) was normal. The values of the Shapiro–Wilk test were greater than .05. That means the scores from both pretests and posttests in the two instruments (the sentence combining and translation tests) were normally distributed. Then, all scores were run to find statistical findings.

Table 2 shows that after being taught by the explicit instruction, the participants had some language improvement in both tests. To be more precise, in a sentence combining test their mean scores increase from 5.95 (49.5%) to 7.73 (64.4%). Standard Deviation (SD) was dropped from 3.63 to 2.83, which reflects that their scores were less disperse. In principle, the lower score in SD, the closer their score to the mean. This signifies a good sign of positive language performance. After all data were filled in a software program for statistical analysis, the paired–sample t–test showed statistically significant difference at level .05 (t = –3.00). It means the treatment, or the explicit instruction enhanced the participants' performance. In the second test or translation task, their mean scores rose up from 5.34 (44.5%) to 8.78 (73.1%); their SD revealed some positive change from 3.29 to 2.50. The t–test was statistically significant difference at level .01 (t = –7.98). Again, the explicit instruction bettered their ERC performance.

Table 2: Overall performance in sentence combining test and translation task

N=23	Mean (full score =12)	Std. Deviation	Std. Error Mean
Sentence Combining Test			
Pretest	5.95	3.63	.75
Posttest	7.73	2.83	.59
t (22) = –3.00; p < .05			
Translation Task			
Pretest	5.34	3.29	.68
Posttest	8.78	2.50	.52
t (22) = –7.98; p < .01			

Below are the numbers of participants who answered correctly on the 12 items in each test. For example, only four participants out of twenty–three could answer question 9 in the pretest (sentence combining test); however, the number of participants increased after the treatment. That is, ten participants did it correctly in the posttest.

A comparison between pretest and posttest on
the number of participants who answered each item correctly

Sentence combining test (overall)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Pre	12	11	18	11	17	13	14	7	4	7	9	14
Post	19	10	21	11	20	12	15	9	10	9	15	18

Translation task (overall)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Pre	7	8	15	6	8	8	18	8	8	20	3	14
Post	18	14	16	17	18	14	23	21	20	22	5	14

To see a clearer picture of language development, we set up the score ranges in three levels (low, mid, high), as in Table 3.

Table 3: Score ranges from the two tests

Score Ranges	Sentence combining test		Translation task	
	Pretest	Posttest	Pretest	Posttest
1–4 (low)	7	3	13	1
5–8 (mid)	10	9	4	10
9–12 (high)	6	11	6	12

The numbers of the pretest and posttest refer to the numbers of participants who fall into the three range scores.

In both sentence combining test and translation task, all range scores reveal some changes. The highest range score (9–12) reflects some positive changes. That is, when scores from the pretest and posttest were compared, more participants gained higher scores in the posttest (from six to eleven and six to twelve). In the mid score range (5–8), the number of participants was slightly lower in the posttest in the sentence combining test (from ten to nine participants), but it has more people in the translation task (from four to ten participants). The lowest score (1–4) also reflects a positive change. To be more precise, there were seven participants in the pretest and the number was lowered to three in the posttest (sentence combining test). In the translation task, thirteen participants were in the pretest and the number of participants was dropped to one in the posttest.

The second research question: *Before and after the explicit instruction, do Thai EFL learners' performance still follow the Noun Phrase Accessibility Hierarchy (NPAH)?*

This part is presented based on the research instruments. It begins with the sentence combining test, followed by the translation task.

NPAH

Table 4: Sentence Combining Test (A comparison among Subject, Object, Genitive)

Question items	Subject	Object	Genitive
	1, 3, 11, 12	2, 4, 6, 10	5, 7, 8, 9
Pretest scores	12, 18, 9, 14	11, 11, 13, 7	17, 14, 7, 4
Posttest scores	19, 21, 15, 18	10, 11, 12, 9	20, 15, 9, 10

Pretest: Subject > Object, Genitive

Posttest: Subject > Genitive > Object

To understand Table 4, all numbers in the first row refer to question items on the test. The second and third rows reflect the scores from each question items in the pretest and posttest, respectively. For example, question item 1 falls into the subject relative clause; the pretest score is 12 and the posttest score is 19.

The F–test was run to investigate the difference among the three types of ERCs in both pretest and posttest. In the pretest, the ranking scale was: Subject > Object, Genitive. That means students performed Subject RCs better than the other two types. Their performance in Object and Genitive RCs were in the same level. On the other hand, in the posttest, the ranking scale was: Subject > Genitive > Object. After the students were trained for four weeks, it turns out that the Subject RC performance was still in the highest level and students performed the Genitive RCs better than the Object RCs. This was not compatible with NPAH in that Genitive RC should be the most marked form or is located on the right side of the scale. The F–test in the pair set revealed that in the pretest, there was no significant difference among Subject, Object, and Genitive ERCs (F=.985; p>.05). Their mean scores out of the total of 4 in each category were 2.30, 1.83, and 1.83, respectively. The average score was 1.99/4. Nonetheless, in the posttest, the mean scores were 3.30, 1.96. 2.48, respectively. The average score was 2.58. The statistically significant difference was found (F= 6.77; p<.05). To be more specific, only two pairs (Subject–Object; Subject–Genitive) were found statistically significant difference. No significant difference exists in a pair of Object and Genitive. That means the treatment (explicit instruction) makes a difference when we compare the scores between Subject–Object and Subject–Genitive.

Table 5: Translation Task (A comparison among Subject, Object, Genitive)

Question items	Subject	Object	Genitive
	4, 5, 7, 10	1, 6, 8, 9	2, 3, 11, 12
Pretest scores	6, 8, 18, 20	7, 8, 8, 8	8, 15, 3, 14
Posttest scores	17, 18, 23, 22	18, 14, 21, 20	14, 16, 5, 14

Pretest: Subject > Genitive > Object

Posttest: Subject > Object > Genitive

In Table 5, the students were asked to translate Thai sentence with relative clause structure into English. In the pretest, their ranking scale was: Subject (2.26) > Genitive (1.73) > Object (1.34). The average score from the three types was 1.78. After the treatment, their ranking scale in the posttest was: Subject (3.47) > Object (3.17) > Genitive (2.13). The average score was 2.92. The F–test reveals that there was no significant difference among the three types in the pretest (F= 2.947; p>.05). On the other hand, the significant difference was found in the posttest (F= 9.768; p<.05). To be more specific, the significant difference exists in Subject–Genitive and Object–Genitive. But the mean scores between Subject and Object ERCs was not statistically significant difference.

Discussion and Conclusion

To answer the first research question how the explicit instruction had an impact on students' performance, the statistical findings reveal the significant difference in both the sentence combining test and the translation task. That means the explicit intervention did assist the students to understand ERC better. All scores in the posttest were higher than those in the pretest. The causes behind this are: the rules of the grammar were initially taught by the instructor how ERCs were formed. The instructor provided the forms and functions of ERCs and broke them into three major types. That is, the teaching started from the easiest form, namely Subject ERC and ended with the most difficult one or Genitive ERC. During the treatment in each week, students watched and listened to the instructors

how individual types of ERC were formed and functioned. Then, both the instructor and the students did the drills together. Finally, the students were asked to combine two complete sentences into a new sentence with a dependent clause and independent clause. To ensure that the students understood what they were training, after they constructed a new sentence, the students had to underline ERC and circle the noun that the ERC modified. Therefore, they gained a clear picture how ERC was formed to modify a noun. To make them understand better, the instructor brought up complete sentences with ERC. Then, the students were asked to break the sentence into two complete sentences. These followed the explicit instruction in the sense that it began with "*I do it*", then "*We do it*", and finally, "*You do it*". Nonetheless, things did not flow easily from day one to the end of the training. This is not an unexpected phenomenon since the students learned the structures of ERCs from the least complicated (Subject ERC) to the most complicated one (Genitive ERC). In fact, problems or difficulties emerged when the students learned the Object ERC. The confusion happened when some students could not identify between the Subject and Object ERCs. To alleviate this difficulty, two things were brought into the students' attention. One was the forms; the other was the functions of a noun that ERCs modified. See the following classroom activity.

Instruction: Combine two sentences together. Use the sentence on the left as a main clause; the other one on the right must be an adjective clause.

(1) That is Tom. He helped me last night.   (That is **Tom,** who helped me last night.)
(2) That is Tom. You met him last night.   (That is **Tom,** whom you met last night.)

During the teaching session, some students used a relative marker 'who' with both sentences. To clarify this, the instructor provided the instruction by asking them to see the form of the two sentences. That is, the Subject ERC always begins with a relative clause marker and a verb. In the Object ERC, the relative clause marker must be followed by either a pronoun or a noun. In terms of the function of a noun in front of ERC, the one in the Subject

ERC functions as the subject in the ERC. On the other hand, the one in the Object ERC functions as the object in the ERC. To illustrate, in "*Tom, (who) helped me last night*" the term "Tom" functions as a subject of ERC. In contrast, in "*Tom, you met (him) last night*" the term "Tom" functions as an object of the dependent clause.

However, things were still difficult for some students. The other way to make them understand was to pinpoint that whenever two sentences were combined with the concept of adjective clause, some part of the dependent clause must be deleted. Again, consider the two sentences above. In (1) when the sentence on the right (He helped me last night) was joined the first sentence, the subject (he) must be deleted since it referred to the term "Tom". Then, a relative marker "who" was placed after the term "Tom", as in (3).

(3) That is Tom. who He helped me last night. → That is Tom, who helped me last night.

This worked the same way as (2) in the sense that one part of the sentence on the right must be removed. So, the term "You" could not be removed since it was different term from "Tom". However, in the dependent clause, the term "him" was deleted because it refers to "Tom", as in (4).

(4) That is Tom. whom You met him last night. → That is Tom, whom you met last night.

In terms of the Genitive "whose", the instructor showed how it was formed. The key term was a possessive adjective in the sentence on the right, as in (5).

(5) That is Tom. His wife is an English teacher.

Students performed quite well in the classroom since they connected the two sentences and removed the term "his" and replaced it with the term "whose". Once again, things were complicated when they dealt with the following sentence.

(6) That is a man. I respect his opinion. → That is a man whose opinion I respect.

Because the new sentence, particularly the ERC part, looked unconventional in the students' mind. That is, it would look better to say "I respect opinion". It took them awhile to strictly follow the rule of ERCs when they connected the sentence on the right with a possessive adjective. That is, they were trained to attach a noun with a possessive adjective (*his opinion*) in the right sentence (*I respect his opinion*) to a noun in the sentence on the left (*That is a man*). Then, they attached "his opinion" followed by "I respect". Finally, they changed the possessive adjective "his" to "whose". It took them a while to be familiar with this type of structure.

So, the explicit instruction breaks down contents into smaller parts to make it easy to the learners to understand the structure. The "I do it" by the teacher and "We do it" make them less worried about how to construct ERC. Then, after they had more self-confidence, the students constructed ERCs by themselves. In terms of previous studies in the explicit instruction, the findings were compatible with the studies from Andrews (2007) and Nezakat-Alhossaini et al. (2014) in the sense that explicit instruction helped learners to comprehend complex sentence structure better. In addition, Chaiyapho (2017)'s findings also provided positive results in that teaching complex sentences through explicit instruction to Thai learners could enhance students to understand complex sentence.

To answer the second whether before and after the explicit treatment Thai university students followed the NPAH.

As mentioned in the literature review section, the NPAH posits that learners tend to learn from an easy form (unmarked form) to the difficult one (marked form). As a result, the scale of accessible hierarchy is: Subject > Object > Genitive. In the first instrument (sentence combining test), the findings did not completely fit the NPAH theory. Below is what this study found in the sentence combining test (the pretest and the posttest) when compared to the NAPH:

NAPH:	Subject > Object > Genitive
Pretest:	Subject > Object, Genitive
Posttest:	Subject > Genitive > Object

Only the Subject ERC stayed consistent in both the pretest and the posttest. This finding is congruent with many previous studies (Xu, 2011; Phoocharoensil, 2009; Şavran, 2022; and others). Nonetheless, Ozeki and Shirai (2007)'s findings seem to be different from others including the current study in that subject ERC is not easier than the others. It might be related to the nature of Japanese language itself. It is beyond this study to go into an in-depth analysis in this point. Let's consider the current findings and why the pretest and posttest findings were different from NAPH. In the pretest, students showed no different performance between Object and Genitive ERCs. It is possible that the participants were confused between when to use 'whose' and 'whom'. Consider (7), (8), and (9).

(7) Steven spoke to the woman.　　　She was standing next to him.
- Steven spoke to the woman <u>who was standing next to him</u>.

(8) They hired the man.　　　We interviewed the man last week.
- They hired the man <u>whom we interviewed last week</u>.

(9) That is Mark.　　　His car is blue.
- That is Mark <u>whose car is blue</u>.

The pronoun in the right sentence in (7) can be connected to the term 'woman" in the sentence on the left. However, in (8) and (9), the pronouns "we" and "his car" could confuse the students to choose which relative markers between "whom" and "whose" should be selected. Things were much easier after the training for four weeks. The students realized that the relative marker "whose" was related to the possessive adjectives (his, her, their, its) in the sentence on the right. In other words, possessive adjectives provided a clue to choose the right form. As a result, students performed the Genitive ERC better than the Object ERC in the posttest.

Let's consider the findings from the other instrument, namely the translation task. Below is what this study found in the second instrument.

NAPH:	Subject > Object > Genitive
Pretest:	Subject > Genitive > Object
Posttest:	Subject > Object > Genitive

The findings from the translation task reveal that the posttest followed the theory. Notice that only the Subject ERC stayed consistent in both the pretest and the posttest. Why did the pretest differ from NAPH? In fact, the findings in the pretest were very surprising for one obvious reason. That is, it was not easy for the participants to identify Genitive ERC in the Thai sentences. Consider (10), (11), and (12).

(10) เพลงที่พวกเราฟังเมื่อคืนนี้ไพเราะมาก

- The song <u>which we listened to last night</u> was very beautiful.

(11) ฉันขอบคุณผู้หญิงคนที่ช่วยเหลือฉันเมื่อวานนี้

- I thank the woman <u>who helped me yesterday</u>.

(12) ฉันรู้จักผู้ชายคนที่จักรยานถูกขโมย

- I know the man <u>whose bicycle was stolen.</u>

Perhaps the position of the adjective clause might help them to choose the right form. That is, in (12) they just attached the adjective clause at the end of the sentence, but in (10), they had to insert the clause somewhere in the middle of the sentence. In general, having ERC at the end of the sentence (ended structure) is easier than having it in the middle of the sentence (embedded structure) since it is related to the flow of information. Whenever the ERCs are in the middle of the sentence, the flow of information is obstructed when compared to those in the end. Needless to say, when the Genitive ERC was located in the middle of the sentence, the participants faced an uphill task, as in (13) from item 11 from the translation task.

(13) เด็กคนที่ฉันทำของเล่นพังกำลังร้องไห้

- The child <u>whose toy I broke</u> is crying now.

The findings correspond to Nuamthanom Kimura (2015)'s findings. That is, the embedded structure is more marked or difficult than the ended structure since the flow of information is obstructed. After the training, students felt more comfortable with the three types of ERCs. We found that the Thai sentences in the Genitive structure posed more difficult to the students than the other two structures. It was not easy for them when Genitive ERCs were used when they had to converse them to English. We realized that this went beyond the structure of Genitive ERCs themselves but the native language caused some difficulty for them to access to the Genitive ERCs.

Limitations

The number of participants might be one of the major limitations. It is a well-known fact that the number of sample size goes hand in hand with the power of test statistics. That is, the power of the test increases as the sample size increases. Another limitation is the type of data to account for the language development/ training/ phenomenon. That is, a set of qualitative data is missing. As a result, the feedback or opinions on the teaching methods did not exist. It would be nice to have the information regarding how they students feel, what they think, and why they make certain choices. To illustrate, items 8 and 10 were difficult for the students. What would be the causes behind this difficulty should be investigated. So, the qualitative data helps us to find out the cause of difficulty. This leads to another possible research tool. That is, the interviews should be another research for the future studies to bring the qualitative data set in the studies.

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