Error Analysis of English Relative Clauses in Argumentative Essays Written by Thai EFL Learners

การวิเคราะห์ข้อผิดพลาดในคุณานุประโยคภาษาอังกฤษในเรียงความเชิงโต้แย้งโดยผู้เรียนชาวไทยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศ

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Abstract

This research aimed to study English relative clauses (RCs) in argumentative essays written by Thai EFL learners by analyzing 1) the frequency of RCs, 2) the frequency of RC types on the Noun Phrase Accessibility Hierarchy (NPAH), 3) typical errors in RCs, and 4) the frequency of errors regarding RC positions. The participants were 22 second-year English major students. The instrument was final exam papers in the Essay Writing course. The results showed that 1) RRCs were used more frequently than NRRCs; 2) three RC types on the NPAH were used; 3) the most typical errors in RRCs were subject-verb agreement, omission of a main verb in RCs, and incorrect use of a verb phrase in RCs, while those in NRRCs were omission of commas in NRRCs and use of relative pronoun "that" in NRRCs; and 4) center-embedded RCs were used more incorrectly than right-embedded ones.

Keywords: English Relative Clauses, Argumentative Essays, Thai EFL Learners

บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาคุณานุประโยคภาษาอังกฤษในเรียงความเชิงโต้แย้งซึ่งเขียนโดยผู้เรียนชาวไทยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศ โดยวิเคราะห์ 1) ความถี่ในการใช้คุณานุประโยค 2) ความถี่ในการใช้คุณานุประโยคตามแนวคิดลำดับการเข้าถึงนามวลี 3) ข้อผิดพลาดที่พบบ่อยในการใช้คุณานุประโยค และ 4) ความถี่ของข้อผิดพลาดเกี่ยวกับตำแหน่งของคุณานุประโยค ผู้เข้าร่วมการวิจัยได้แก่ นิสิตระดับปริญญาตรี ชั้นปีที่ 2 สาขาวิชาภาษาอังกฤษ จำนวน 22 คน เครื่องมือการวิจัยได้แก่ ข้อสอบปลายภาควิชาการเขียนเรียงความ ผลการวิจัยพบว่า 1) มีการใช้คุณานุประโยคแบบเจาะจงมากกว่าแบบไม่เจาะจง 2) มีการใช้คุณานุประโยคสาม

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ประเภทตามแนวคิดลำดับการเข้าถึงนามวลี 3) ข้อผิดพลาดที่พบบ่อยที่สุดในการใช้คุณานุประโยคแบบเจาะจง ได้แก่ ความสอดคล้องระหว่างประธานและกริยา การละกริยาหลักในคุณานุประโยค และการใช้กริยาวลีในคุณานุประโยคไม่ถูกต้อง ขณะที่ข้อผิดพลาดที่พบบ่อยที่สุดในการใช้คุณานุประโยคแบบไม่เจาะจง ได้แก่ การละจุลภาคในคุณานุประโยคแบบไม่เจาะจง และการใช้ประพันธสรรพนาม "that" ในคุณานุประโยคแบบไม่เจาะจง และ 4) มีการใช้คุณานุประโยคชนิดที่ปรากฏแทรกกลางประโยคหลักผิดมากกว่าคุณานุประโยคชนิดที่ปรากฏท้ายประโยคหลัก

คำสำคัญ: คุณานุประโยคภาษาอังกฤษ เรียงความเชิงโต้แย้ง ผู้เรียนชาวไทยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศ

Introduction

Relative clauses (RCs) are generally considered a noteworthy syntactic structure in writing academic English. As Deveci and Nunn (2018) point out, RCs make up almost half of the total number of sentences in humanities and social sciences research articles and are pervasively used in all sections, especially introduction, literature review, and discussion. Similarly, Cho and Lee (2016) report frequent use of RCs in science and engineering journal papers, with notably high frequency of non-restrictive relative clauses (NRRCs). In spite of their significant role in academic texts, RCs pose difficulties for learners of English as a foreign language (EFL) across diverse first-language backgrounds, e.g. Chinese (Bao, 2015), Indonesian (Kusdianty, 2016), Turkish (Erdogan, 2005), and Arabic (Alotaibi, 2016).

Like English language learners in other countries, Thai EFL learners often face problems in their acquisition of English RCs (Phoocharoensil, 2009; Phoocharoensil & Simargool, 2009; Phoocharoensil & Simargool, 2010; Phoocharoensil, 2016; Amornwongpeeti & Pongpairoj, 2012; Amornwongpeeti & Pongpairoj, 2014). In other words, in their attempt to acquire English RCs, they tend to commit a number of errors, together with various types of errors, e.g. pronoun retention, null-preposition construction, misuse of genitive marker, use of relative pronoun "that" in NRRCs, and lack of commas in NRRCs (Phoocharoensil, 2016).

Although the acquisition of English RCs by Thai learners was previously examined by various methods, their competence in using these structures were largely assessed in rather decontextualized tasks, e.g. translation task (Phoocharoensil, 2009), grammaticality judgment task (Amornwongpeeti & Pongpairoj, 2012), sentence interpretation task (Amornwongpeeti & Pongpairoj, 2014), and sentence-combining task (Termjai, 2013; Termjai & Cedar, 2013). On the

other hand, very few studies examined Thai learners' use of English RCs in academic writing, i.e. descriptive essays (Phoocharoensil, 2009; Phoocharoensil & Simargool, 2010).

The body of research available indicates the scarcity of studies on Thai EFL learners' acquisition of English RCs in a more contextualized task, especially academic writing. As RCs are one of the most pervasive sentence structures in argumentative essay written by Thai students (Chuenchaichon, 2019), the present research, therefore, is aimed at investigating Thai students' use of English RCs in argumentative essays, which are considered the most typical and critical in academic writing especially at tertiary education (Ka-kan-dee & Kaur, 2014). In writing this type of essay, authors are typically required to "take a stand on an issue, support their stand with solid reasons, and support their reasons with solid evidence" (Oshima & Hogue, 2014, p. 153). They are also obliged to vary their linguistic structure, including sentence structure and sentence type, to create rhythmic prose and maintain the interest of audience (Deveci & Nunn, 2018).

As existing research has substantially emphasized on the error analysis of Thai EFL learners' acquisition of English RCs in a rather decontextualized context as mentioned earlier, the results are inevitably unable to reflect the learners' production of RCs in a natural, communicative manner. The present research, on the other hand, focuses on investigating Thai students' use of English RCs and errors they commit in their production of RCs in a pragmatic context, i.e. argumentative essay writing. In other words, the students' use of RCs in their writing, among other sentence structures, is not meticulously planned or forced beforehand but in fact emerges spontaneously in an attempt to create an effective argument. Consequently, research results yield a more genuine picture of the students' acquisition of English RCs in an authentically pragmatic manner in academic writing.

This research is particularly intended to investigate 1) the frequency of RCs, both RRCs and NRRCs, 2) the frequency of RC types on the Noun Phrase Accessibility Hierarchy (NPAH) (Keenan & Comrie, 1977), 3) typical errors in RCs, and 4) the frequency of errors regarding RC positions in argumentative essays written by Thai EFL learners. Potential findings will not only help enhance English language educators' understanding of students' learning process and difficulties they are currently encountering but also reflect Thai students' acquisition of RCs in academic writing in English. Based on the objectives stated above, the research questions thus were formulated as follows.

Research Questions

1. What is the frequency of English RCs, both RRCs and NRRCs, used in argumentative essays written by Thai EFL learners?

2. What is the frequency of RC types on the NPAH in the essays?

3. What are typical errors in RCs in the essays?

4. To what extent do the learners commit errors regarding RC positions in the essays?

Scope and Limitation of the Study

This study focuses on the analysis of English RCs in argumentative essays written by Thai students by specifically investigating: 1) the frequency of RCs, both RRCs and NRRCs, 2) the frequency of RC types on the NPAH, 3) typical errors in RCs, and 4) the frequency of errors regarding RC positions. The analysis of learner errors in the RCs covers lexical, grammatical, and mechanical errors that emerged from their production of RCs, and this analysis is not necessarily restricted to errors particularly pertaining to difficulty in RC use. However, this study is limited to the investigation of English RCs in 22 argumentative essays written by 22 English major undergraduates by employing convenience sampling. This insufficient sample size, thus, cannot be representative of all Thai EFL learners, and the statistical findings may not be generalizable.

Literature Review

1. English Relative Clauses

An RC describes a noun or a noun phrase in the main clause of a sentence, telling us "which person or thing (or what kind of person or thing) the speaker means" (Murphy, 2012, p. 184). It typically begins with relative pronouns, i.e. who, whom, which, that, and whose, or relative adverbs, i.e. where, when, and why, as exemplified in Table 1 below (Hewings, 2008, pp. 106-108). The RCs are written in italics.

Table 1 Relative pronouns and relative adverbs: usage and examples

Relative Pronouns / Adverbs	Usage	Examples
who	It refers to people.	I have a friend *who plays guitar*.
whom (formal)	It refers to people when it replaces an object in the RC.	The boy *whom Elena had shouted at* smiled.

Relative Pronouns / Adverbs	Usage	Examples
which	It refers to things.	The paintings *which Mr. Flowers has in his house* are worth around £100,000.
that	It refers to people or things, usually in spoken English.	That's the man *that I met at Alison's party*.
whose	It refers to possessives.	Stevenson is an architect *whose designs have won international praise.*
where	It refers to location.	This was the place *where we first met.*
when	It refers to time.	He wasn't looking forward to the time *when he would have to leave.*
why	It is used after the noun "the reason."	I didn't get a pay rise, but this wasn't the reason *why I left.*

There are two types of RCs: restrictive (or defining) and non-restrictive (or non-defining) RCs. As Nettle and Hopkins (2003) mention, restrictive RCs (RRCs) "give information to help us identify a specific person, animal or thing," while non-restrictive RCs (NRRCs) "give additional information which does not identify the person, animal or thing" (p. 120). Also, NRRCs can modify a single noun, a noun phrase, or an entire proposition. Here are examples.

RRC:

The man *who was wearing a lime green hat* seemed a little strange.

(The RC helps identify a specific person, i.e. the man in the lime green hat.)

NRRC:

The man, *who was wearing a lime green hat*, seemed a little strange.

(The RC gives additional information about the man being mentioned.)

Nettle and Hopkins (2003) further emphasize the differences between RRCs and NRRCs in written English (p. 126). First, RRCs require no commas. NRRCs, on the other hand, are separated from the main clause by commas. In addition, the relative pronoun "that" can be used instead of the relative pronouns "who" or "which" in RRCs. In contrast, the relative pronoun "that" is prohibited in NRRCs. Another notable difference is that a relative pronoun can be omitted in RRCs when it replaces the object in the RCs, but it cannot be omitted in NRRCs. For example, in the statement

"That's the man *that I met at Alison's party*," the relative pronoun "that" replaces the object in the RRC "the man," and thus it can be omitted.

2. Theories Related to Second Language Acquisition of English RCs

Keenan and Comrie (1977, p. 66) propose the Noun Phrase Accessibility Hierarchy (NPAH), which expresses "the relative accessibility to relativization of NP positions in simplex main clauses," as illustrated in Table 2 below.

Table 2 RC types on the NPAH (Keenan & Comrie, 1977, pp. 70-74)

RC Types	Abbreviation	Examples
Subject	SU	The woman *that saw the student*
Direct object	DO	The boy *that I saw* danced on the table.
Indirect object	IO	The woman *that the man has given the book to*
Oblique	OBL	The stick *with which Hyensik beat the dog*
Genitive	GEN	The man *whose dog is smart*
Object of comparison	OCOMP	The man *who Mary is taller than*

It is claimed that "if a language can relativize any position low on the NPAH, then it can relativize all higher positions" (Keenan & Comrie, 1977, p. 68). In other words, if a language can relativize OBL, then it can relativize SU, DO, and IO, all of which are higher positions than OBL. Few languages, including English, permit relativization on all the positions on the NPAH. Additionally, the NPAH predicts the relative difficulty in relativization, from the easiest, i.e. SU, to the most difficult, i.e. OCOMP. This implies that EFL learners attempting to acquire English RCs are more likely to acquire SU easier than any position lower on the NPAH. Consequently, they tend to make fewer errors in production of this position than any others on the NPAH.

In addition to the NPAH, the position of RCs is another factor that can affect the acquisition of RCs. According to Perceptual Difficulty Hypothesis (PDH) (Kuno, 1974), a sentence with a center-embedded RC, which is embedded in the main clause, is more difficult to acquire and process than that with a right-embedded RC, which is attached to the end of the main clause. For example, the sentence with a center-embedded RC "The man *who bombed the hotel* has been caught by the police" is more difficult to acquire than the sentence with a right-embedded RC "The

police have caught the man *who bombed the hotel*" (Termjai & Cedar, 2013, p. 378). As a result, EFL learners typically acquire the right-embedded RC before the center-embedded RC.

3. Common Errors in English RCs

English RCs are relatively difficult for EFL learners to master regardless of their mother tongue, e.g. Chinese (Bao, 2015), Indonesian (Kusdianty, 2016), Turkish (Erdogan, 2005), Kuwaiti (Alotaibi, 2016), and Thai (Phoocharoensil, 2016). In acquiring this English structure, they usually make a wide range of errors, as exemplified below.

3.1 Incorrect use of relative pronouns. This error occurs when learners use a relative pronoun incorrectly. In this example, "whom" is used in the subject RC, instead of "who."

*Alan Freed, *whom was born in December 1921*, comes from Ohio. (Kusdianty, 2016, p. 64)

3.2 Noun/pronoun retention, aka resumptive noun/pronoun. This error occurs when a noun or a pronoun which is identical to the head noun in the main clause is retained in the RC when it actually needs to be omitted, as in these examples.

*I found the letter *that I was looking for it*. (Erdogan, 2005, p. 27)

*Mike is visiting the woman *who Mike met the woman on holiday*. (Termjai, 2013, p. 46)

3.3 Omission of prepositions. When forming oblique RCs, some learners opt to omit a preposition in the RC, such as preposition "in" as exemplified below.

*I paid a visit to company last month, ___ *which my brother is working*. (Bao, 2015, p. 142)

3.4 Omission of relative pronouns. This type of error occurs when a relative pronoun is omitted, resulting in an ungrammatical sentence structure, as can be seen below.

*Mary helped the teacher ___ *rewarded the students*. (Alotaibi, 2016, p. 62)

3.5 Omission of commas in NRRCs. Commas need to be used to separate an NRRC from the main clause, but in this example, a comma is omitted between the NRRC and the main clause.

*Her hometown is Hatyai, Songkla *where is same to me*. (Phoocharoensil, 2016, p. 55)

3.6 Use of relative pronoun "that" in NRRCs. This error occurs when learners use the relative pronoun "that" instead of "who", "whom", or "which", in NRRCs, causing errors in written English.

*I have found memories of my hometown, *that is situated in a valley*. (Erdogan, 2005, p. 26)

3.7 Incorrect placement of RCs. In this case, learners place an RC in the wrong position, for example, attaching it to the verb, rather than attaching it to the head noun it modifies, as illustrated below.

*The man fell *who came*. (Termjai & Cedar, 2013, p. 383)

3.8 Incorrect use of genitive relative pronoun. In this case, learners apply a "relative pronoun + possessive adjective" structure when they form genitive RCs. As in this example, the phrase "which his car" is used incorrectly instead of "whose car."

*I came across the teacher *which his* *car was stolen two days ago*. (Alotaibi, 2016, p. 62)

Methodology

1. Participants

Twenty-two second-year English major undergraduate students, native Thai speakers, who enrolled in the Essay Writing course in the second semester of the academic year 2018 at a government university in the lower northern region of Thailand, were recruited in this research employing convenience sampling. Prior to taking Essay Writing, they completed indispensable courses for English academic writing practice, including Intensive English Grammar, Basic Writing, and Paragraph Writing. By the end of the Essay Writing course, they had successfully practiced writing different types of five-paragraph essays: narrative, descriptive, cause and effect, comparison and contrast, and argumentative essays. Each type of essay writing required the students to write an outline, first draft, second draft, and final draft. This writing process also allowed them to exchange peer feedback as well as receive feedback from the instructor and revise their drafts accordingly. This educational background ensures that the participants had already acquainted themselves with necessary writing skills before participating in this study.

2. Instrument

The research instrument was final exam papers in the Essay Writing course which primarily tested students' ability to compose a five-paragraph argumentative essay, along with writing an outline of the essay, using infographic materials provided as supports, and using both in-text and reference citations appropriately. Students were required to select either one of these topics: 1) Raising the legal alcohol drinking age will decrease traffic accidents and other alcohol-related societal problems, and 2) Face-to-face communication is better than social media communication. The word limit length was 480-520, and the time length was 3 hours. Reference books and electronic devices were prohibited during the testing.

3. Data Collection and Analysis

Firstly, the participants' exam papers were collected, and all the instances of RCs, both RRCs and NRRCs, in each of the argumentative essays were identified and tallied in order to find the total number of RCs written by the participants. Then RCs were categorized according to the function of relative pronouns in the RCs, i.e. SU, DO, IO, OBL, GEN, and OCOMP, each of which was then tallied in order to find the total number of each RC type on the NPAH (Keenan & Comrie, 1977).

The next step was to identify errors in RCs used in the essay and classify them into different groups which share similar erroneous features, such as subject-verb agreement, verb tense, resumptive pronouns, etc. At this stage, RRCs and NRRCs were analyzed separately in order to identify typical errors that belong to particular RC types, i.e. RRCs and NRRCs. The errors found were analyzed in terms of descriptive statistics: frequency and percentage.

Findings

1. RCs in Argumentative Essays

The first objective of this research aimed to identify the frequency of RCs, both RRCs and NRRCs, used in the argumentative essays written by Thai EFL learners. It was found that 87 RCs (M = 3.95, SD = 2.10) were used in the 22 essays examined. As Table 3 demonstrates, RRCs were used more frequently than NRRCs, i.e. 83.91% and 16.09% respectively.

Table 3 Frequency of RRCs and NRRCs in the essays

RC Types	Frequency	Percentage
RRCs	73	83.91
NRRCs	14	16.09
Total	87	100.00

2. RC Types on the NPAH in Argumentative Essays

The second research objective aimed to examine the frequency of RC types on the NPAH (Keenan & Comrie, 1977) in the argumentative essays. As Table 4 shows, only three RC types were used in the essays: SU (79.31%), DO (17.24%), and OBL (3.45%), whereas the other three RC types: IO, GEN, and OCOMP were not found to be used in the essays.

Table 4 Frequency of RC types on the NPAH

RC Types	Frequency	Percentage
SU	69	79.31
DO	15	17.24
OBL	3	3.45
Total	87	100.00

3. Errors in RRCs

The third research objective aimed to investigate typical errors in the RCs used in the essays. Of all 73 RRCs used in the argumentative essays, 38 RRCs (52.05%) were used correctly, while 35 RRCs (47.95%) were used incorrectly. Table 5 shows that the most erroneous RC type was OBL (66.67%), followed by SU (54.55%) and DO (20%).

Table 5 Frequency of correct and incorrect use of RCs on the NPAH

RC Types	Frequency of Correct RRCs	Percentage	Frequency of Incorrect RRCs	Percentage	Total
SU	25	45.45	30	54.55	55
DO	12	80.00	3	20.00	15
OBL	1	33.33	2	66.67	3
Total	38	52.05	35	47.95	73

In total, forty errors were found out of 35 incorrect RRCs in the essays. This means some RRCs contained more than one error. Table 6 shows nine main types of errors, the top five of which accounted for 70% of the total number of errors in the RRCs. These were subject-verb agreement (35%), omission of a main verb in RCs (12.50%), incorrect use of a verb phrase in RCs (7.50%), omission of a head noun in the main clause (7.50%), and sentence fragment (7.50%). Each type of error is exemplified below.

Table 6 Types of errors in RRCs in the essays

No.	Types of Errors	Frequency	Percentage
1.	Subject-verb agreement	14	35.00
2.	Omission of a main verb in RCs	5	12.50
3.	Incorrect use of a verb phrase in RCs	3	7.50
4.	Omission of a head noun in the main clause	3	7.50

No.	Types of Errors	Frequency	Percentage
5.	Sentence fragment	3	7.50
6.	Incorrect use of verb tense	2	5.00
7.	Incorrect use of active and passive voice	2	5.00
8.	Incorrect use of collocation	2	5.00
9.	Others	6	15.00
Total		40	100.00

3.1 Subject-Verb Agreement. This error type occurred when the subject (i.e. the head noun) and the verb in an RC did not agree in number. As in the following example, the head noun phrase "A chronic liver disease," which is singular, does not agree in number with the verb in the RC "have," which is plural.

*A chronic liver disease *that <u>have</u> strong relation with alcohol drinking* is the result of long-term alcohol drinking.

3.2 Omission of a main verb in RCs. This error type occurred when the main verb in an RC was omitted. As in the example below, the RC in italics lacks a main verb and thus requires a verb such as "is" for it to be grammatically correct.

*Social media communication is the one way *that ___ better than another ways.*

3.3 Incorrect use of a verb phrase in RCs. This error type occurred when the verb in an RC was followed by an inappropriate verb form. In the following example, the verb "helps" in the RC in italics should be followed by either the to-infinitive "to reduce" or the infinitive without to "reduce." Therefore, the past simple form "reduced" causes an error in the RC.

*Humans think that social media is the best entertainment *that helps <u>reduced</u> stress and gives them many enjoyment.*

3.4 Omission of a head noun in the main clause. This error type occurred when the head noun the RC modified was omitted. In other words, there was no head noun for the RC to modify, as can be seen in this example.

*For example, give a change for ___ *who cannot speak.*

3.5 Sentence fragment. This error type occurred when the use of RC led to a sentence fragment. As in the following example, the sentence fragment containing an RC, "using the social media communication ... face to face communication" lacks a main verb and is an incomplete thought.

*Others argue that using the social media communication *that make the relationship between people more close to than face to face communication* because it more *conveniently* that people can communicate *others* people ...

3.6 Incorrect use of verb tense. This error occurred when the verb tense in an RC was used incorrectly. As in the RC in italics below, instead of the past simple "crashed," the present simple "crashes" is used to refer to something that happened in the past, i.e. in 2006, resulting in a verb tense error.

*According to driver involved fatal crashes in 2006, the number of teenager *who crashes* is more than that number in high age (Mclean, 2016).

3.7 Incorrect use of active and passive voice. This error type occurred when the active voice was used incorrectly instead of the passive voice, and vice versa. As in this example, the RC in italics should be written in the passive voice "the hole *that is named alcohol drinking*," instead of the active voice.

*If they are fall into the hole *that named alcohol drinking*, there life could be drastically changed.

3.8 Incorrect use of collocation. This error type occurred when collocation was used incorrectly. As in the following example, the phrase "did mistakes" in the RC in italics would sound incorrect to native English speakers, while the collocation "make mistakes" should be used instead.

*Another example, We can catch liar *who did mistakes by eyes contact*.

3.9 Others. This type consisted of six other error subtypes, each of which occurred only once. These were omission of an RC subject, omission of a relative pronoun, incorrect use of relative pronoun, incorrect placement of preposition, incorrect placement of RC, and incorrect use of reflexive pronoun.

4. Errors in NRRCs

Of all 87 RCs in the essays, there were 14 NRRCs. All were SU, and they were all used incorrectly. Like RRCs, some NRRCs contained more than one type of error. To illustrate, 31 errors were found, which could be classified into six types of errors, as shown in Table 7. It was obvious

that the most frequent errors in the NRRCs were omission of commas in NRRCs (41.94%), followed by use of relative pronoun "that" in NRRCs (25.81%), and subject-verb agreement (16.13%). The rest were sentence fragment (9.68%), omission of a main verb in NRRCs (3.22%), and incorrect use of active and passive voice (3.22%). Each of these error types is exemplified below.

Table 7 Types of errors in NRRCs in the essays

No.	Types of Errors	Frequency	Percentage
1.	Omission of commas in NRRCs	13	41.94
2.	Use of relative pronoun "that" in NRRCs	8	25.81
3.	Subject-verb agreement	5	16.13
4.	Sentence fragment	3	9.68
5.	Omission of a main verb in NRRCs	1	3.22
6.	Incorrect use of active and passive voice	1	3.22
	Total	31	100.00

4.1 Omission of commas in NRRCs. This error type occurred when commas that were used to set off NRRCs from the main clause were omitted. As illustrated below, the NRRC in italics adds additional information to the main clause, and it does not restrict the entire main clause; therefore, it should be set off from the main clause by a comma.

*According to Martell (2017), it was found that family talks to each other more than 70 percent ___ *which indicated that communicating face to face was famous in family.*

4.2 Use of relative pronoun "that" in NRRCs. This error type occurred when relative pronoun "that" was used to introduce NRRCs. In fact, relative pronouns "who," "whom," "whose," and "which," except "that," can be used to introduce NRRCs. In the following example, however, the NRRC in italics is introduced by "that" instead of "which," causing an error of this type.

*According to statistic, use of technology by college students in cell phone and social networking were almost equal <u>that</u> *were 32% and 31%.*

4.3 Subject-verb agreement. This error type occurred when the subject (i.e. the head noun) and the verb in an NRRC did not agree in number. As in the following example, the head noun phrase "insomnia symptom," which is singular, does not agree in number with the verb in the NRRC "make," which is plural.

*In some case, they may struggle with insomnia symptom *which <u>make</u> their brain process ineffectively.*

4.4 Sentence fragment. This error type occurred when the use of NRRC led to a sentence fragment. The following sentence fragment, along with an RC in italics, lacks a main verb and is considered an incomplete thought.

*Despite the fact, talking face to face with friends, people around them or their family *that is the best way to make them happy and without stress.*

4.5 Omission of a main verb in NRRCs. This error type occurred when the main verb in an RC was omitted. As in the example below, the RC in italics lacks a main verb and thus requires a verb such as "is" for it to be grammatically correct.

*According to statistics show people communicate by face to face with family 79.0% *that ___ more than communicate by social media approximately 14.6% (Martell, 2017).*

4.6 Incorrect use of active and passive voice. This error type occurred when the active voice was used incorrectly instead of the passive voice. The RC in italics below should be written in the passive voice "which is caused from ..." to explain the reason why someone has become an introvert.

*The main key leads you to be introvert *which <u>have caused</u> from using social media excessively.*

5. Errors Regarding RC Positions

The final research objective aimed at investigating the extent to which the learners committed errors regarding RC positions. The analysis of RC-position-related errors revealed that the RCs in the essays were used in center-embedded position, right-embedded position, and other position, i.e. neither center- nor right-embedded position. As Table 8 shows, the center-embedded RCs were used less frequently but more incorrectly than the right-embedded RCs. In other words, 61.90% of center-embedded RCs were used incorrectly, while 56.92% of right-embedded RCs were used incorrectly.

Table 8 Frequency of correct and incorrect RCs by positions

RC Positions	Frequency of Correct RCs	Percentage	Frequency of Incorrect RCs	Percentage	Total
Center-Embedded	8	38.10	13	61.90	21
Right-Embedded	28	43.08	37	56.92	65
Other	1	100.00	0	0.00	1

Discussion

The study of English RCs in the argumentative essays written by Thai students indicates that RCs are common sentence structures in argumentative essay writing in English. In other words, 87 RCs were found in the essays analyzed (M = 3.95, SD = 2.10). The findings consistently agree with Chuenchaichon's (2019) study that RCs (M = 6.82), among other types of dependent clauses, were commonly produced in argumentative essays written by Thai third-year undergraduates. Likewise, in Phoocharoensil's (2009) study, 931 RCs were found in 360 descriptive essays (M = 2.59) written by Thai first-year undergraduates. Additionally, Deveci and Nunn (2018) found the number of RCs accounted for 40% of all the sentences in human and social sciences research articles. Similarly, Cho and Lee (2016) found that RCs were frequently used in the four corpora investigated: three science and engineering journals and one English for Specific Purposes journal.

It was also found that RRCs were much more pervasive than NRRCs in the present research, i.e. 83.91% and 16.09% respectively. In like manner, Phoocharoensil (2009) found that RRCs were much more frequent than NRRCs in Thai students' descriptive essays, i.e. 92.16% and 7.84% respectively. Obviously, these correspond to Cho and Lee's (2016) findings that RRCs outnumbered NRRCs in all the four journals analyzed, especially in the English for Specific Purposes journal.

Additionally, the analysis of RC types on the NPAH (Keenan & Comrie, 1977) reveals that three RC types were used in the essays: SU (79.31%), DO (17.24%), and OBL (3.45%). This is similar to the frequency order found in Phoocharoensil's (2009) study of RCs in descriptive essays, except for GEN, namely SU (53.60%), DO (38.67%), OBL (7.52%), and GEN (0.21%). Obviously, both findings are consistent with the NPAH, which argues that SU is more accessible than any type lower on the hierarchy, i.e. DO, IO, OBL, GEN, and OCOMP. Thai EFL learners' overproduction of SU and underproduction of DO, OBL, and GEN may be attributable to transfer of training and avoidance (Phoocharoensil & Simargool, 2010). In other words, Thai students may have been exposed to instructions which emphasize the use of SU more than other RC types, thereby becoming more accustomed to this unmarked RC type than other marked types. As a result, they may also avoid using these more marked RC types, i.e. DO, OBL, and GEN, in their writing.

Regarding errors in RRCs, it is remarkable that errors account for 47.95% of all the RRCs used in the essays. The accuracy order, however, does not support the NPAH, i.e. DO>SU>OBL,

with relatively high percentage of errors in SU (54.55%). The large number of errors in SU are largely attributed to these error types: 1) subject-verb agreement (35%), 2) omission of a main verb in RCs (12.50%), 3) incorrect use of a verb phrase in RCs (7.50%), 4) omission of a head noun in the main clause (7.50%), and 5) sentence fragment (7.50%), all of which account for 70% of all errors in RRCs. Some error types found in the present research are similar to those found in past studies, e.g. subject-verb agreement (Phoocharoensil, 2009), omission of an RC subject (Phoocharoensil & Simargool, 2010), incorrect use of a relative pronoun, and incorrect placement of an RC (Termjai & Cedar, 2013). The analysis of learner errors clearly indicates that the learners may lack complete knowledge and competence of RC constructions as well as other grammar points, especially subject-verb agreement; as a result, they tend to commit errors when producing RCs in English. Unlike previous studies (e.g. Phoocharoensil, 2009; Phoocharoensil & Simargool, 2009; Termjai, 2013), the present research did not find any instances of resumptive pronouns. This is likely that the learners understand that resumptive pronouns need to be omitted in RC constructions.

        Considering errors in NRRCs, it is noteworthy that all NRRCs in the present research are used incorrectly. This indicates that the learners have not possessed complete knowledge of NRRC constructions, namely, they use RRCs instead of NRRCs. That is to say, they are unable to distinguish NRRCs from RRCs, resulting in omission of commas in NRRCs (41.94%) and use of relative pronoun "that" in NRRCs (25.81%), all of which account for 67.75% of all errors in NRRCs. These findings are consistent with past studies (e.g. Phoocharoensil, 2009; Phoocharoensil, 2016). The use of "that" in NRRCs can be attributable to the learners' overgeneralization and ignorance about the limitation of "that" in NRRCs (Phoocharoensil & Simargool, 2010). However, the noticeable difference is that more than half of the NRRCs found in the present research are used to modify entire propositions, rather than modify a single noun or a noun phrase, i.e. a proper name, unlike NRRCs found in previous research. This implies that NRRCs modifying an entire proposition may be more difficult for Thai learners to acquire than NRRCs modifying a single noun or a noun phrase.

        Lastly, learner errors in RCs may also be predisposed by RC positions. In other words, center-embedded RCs are less frequent and more erroneous, while right-embedded RCs are more frequent and more correct. This finding strongly supports Perceptual Difficulty Hypothesis (Kuno, 1974) that center-embedded RCs are more difficult to acquire and process than right-embedded RCs. This results in a larger number of errors in the former RCs than the latter, i.e. 61.90% and

56.92% respectively. This also corresponds to Phoocharoensil's (2009) finding that center-embedded RCs occurred much less frequently than right-embedded ones in descriptive essays written by Thai undergraduate students.

However, some limitations of the study should be noted. As this research obtained data from 22 argumentative essays written by 22 Thai students employing convenience sampling, the sample size was too small to be considered representative of the general population, and thus the statistical results could not be generalized to the larger population. Additionally, this insufficient sample size could impact the overall results and conclusions drawn from the research.

Conclusion and Recommendations for Further Research

Although English RCs, especially RRCs, are commonly used in the argumentative essays written by Thai students under investigation, over half of them are used incorrectly. To be more specific, the errors in RRCs are largely attributed to the learners' lack of complete knowledge of certain grammar points, e.g. subject-verb agreement, verb phrase, sentence fragment, verb tense, active and passive voice, to name but a few. The errors in NRRCs, on the other hand, are heavily due to the learners' lack of comprehension of differences between RRCs and NRRCs. In other words, they have difficulty distinguishing RRCs from NRRCs, thereby using RRC constructions where, instead, NRRCs should be used, resulting in most typical errors in commas and relative pronouns. Additionally, more than half of the NRRCs in the essays are used to modify an entire proposition, which may probably pose more difficulty to use correctly than NRRCs used to modify a single noun or a noun phrase.

The findings clearly help to deepen SLA researchers' understanding of the difficulties Thai students are currently facing in their production of English RCs in academic writing as well as provide English language instructors with detailed evidence for guidance in their RC instructions. Learners' correct use of statements with RCs will evidently allow them to use a wide variety of sentence types and structures and will, consequently, enhance the quality of their written work as a whole.

Further research in SLA of RCs may investigate whether errors in RCs committed by learners are in fact "mistakes" or "errors" by allowing them the opportunity to revise their written work to consider whether they merely fail to perform their competence or actually lack sufficient

knowledge of the target language construction. Researchers may also examine whether NRRCs modifying an entire proposition is in fact more problematic for Thai EFL learners to acquire than those modifying a single noun or a noun phrase. It is also important to collect data from a sufficient sample size in order to reflect the general population and conclude valid research results.

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