

An Analysis of Syntactic Complexity Used in Essay Writing

Produced by EFL Writers

การวิเคราะห์เรื่องการเขียนประโยคที่ซับซ้อนในงานเขียนเรียงความ ของผู้เรียนเขียนภาษาอังกฤษในฐานะภาษาต่างประเทศ

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บทคัดย่อ

วัตถุประสงค์ของงานวิจัยนี้ เพื่อศึกษาความซับซ้อนของการเขียนเรียงความภาษาอังกฤษและประเภทของอนุประโยคที่เขียนโดยผู้เรียนภาษาอังกฤษในฐานะภาษาต่างประเทศ โดยศึกษากับนิสิตระดับปริญญาตรี ชั้นปีที่ 3 ภาควิชาภาษาอังกฤษ มหาวิทยาลัยนเรศวร ที่ลงทะเบียนเรียนในรายวิชาการเขียนเรียงความ (205223) จำนวน 49 คน นิสิตดังกล่าวได้ทำข้อสอบการเขียนเรียงความเชิงโต้แย้ง โดยต้องเลือก 1 จาก 3 หัวข้อที่กำหนดให้ไว้ จากนั้นผู้วิจัยเก็บเรียงความและนำไปวิเคราะห์โดยเน้นในเรื่อง 1) อัตราส่วนของอนุประโยคในประโยค 2) อัตราส่วนของอนุประโยคที่พึ่งพิงในอนุประโยค และ 3) อัตราส่วนของอนุประโยคที่พึ่งพิงในประโยค ผลการวิจัยพบว่าเครื่องมือที่ใช้ในการวิเคราะห์ความซับซ้อนของประโยคมีประสิทธิภาพในการหาความซับซ้อนของประโยค ทั้งนี้ยังพบว่านิสิตในงานวิจัยนี้มีการใช้อนุประโยคที่ทำหน้าที่เสมือนคำนามมากที่สุด รองลงมาคืออนุประโยคที่ทำหน้าที่เสมือนคำกริยวิเศษณ์ และอนุประโยคที่ทำหน้าที่เสมือนคำคุณศัพท์ ส่วนทำงานวิจัยนี้มีข้อเสนอแนะทางด้านการสอนและข้อแนะนำสำหรับงานวิจัยในภายหน้าเกี่ยวกับการสอนและการทำวิจัยด้านการเขียนภาษาอังกฤษในระดับประโยค

คำสำคัญ: ความซับซ้อนของประโยค การเขียนเรียงความ ผู้เรียนภาษาอังกฤษในฐานะภาษาต่างประเทศ

Abstract

The purpose of the study was to investigate the syntactic complexity of English essay writing of English learners and the clause types produced by these EFL writers. The participants were 49 third-year English major undergraduate students who enrolled in essay writing course (205223), at Naresuan University, Thailand. They were asked to do an argumentative essay writing test by choosing only one of the three given topics. Then, their essay scripts were collected and analyzed by looking at 1) the ratio of clause per T-unit (C/T), 2) the ratio of dependent clauses per clause (DC/C), and 3) the ratio of dependent clauses per T-units (DC/T). It was found that these syntactic complexity measures are proved to be feasible measures to explore the syntactic complexity of writing learners, and noun clauses were produced the most, followed by adverb clauses and adjective clauses, respectively. This study provides further pedagogical implications and recommendations in response to the findings, particularly for EFL writing instruction at the sentence level.

Keywords: Syntactic Complexity, Essay writing, EFL learners

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Introduction

In university context, one of the most important skills for learning English is writing (Hyland, 2003). It is required by English curriculum in colleges and universities. University students who are English as a second language (ESL) and English as a foreign language (EFL) learners need to learn many types of writing, for example, basic writing, paragraph writing, and essay writing. Thus, producing effective writing is crucial in academic writing contexts.

In Thailand, one of the main types of English writing at college or university is essay writing. The importance and necessity of this type of writing is undeniable. As found in Chuenchaichon (2011), in many well-known universities in Thailand (e.g. Naresuan University, Chiangmai University, and Khon Kaen University), English major students are required to write longer texts, such as essay writing, research report writing, and creative writing in the last two years of their curriculum. This means that these EFL learners are required to write a variety of essay types, for example, exposition, narration, description and argumentation for academic writing. It should be noted that argumentative essay writing is the main focus of this study. This is because this essay type is required by English curriculum and many English proficiency tests. Especially, in the International English Language Testing System (IELTS) or Test of English as a Foreign Language (TOEFL), writing English argumentative essay is one part of these tests. Oshima and Hogue (2006) note "argumentation is a popular kind of essay question because it forces students to think on their own; they have to take a stand on an issue, support their stand with solid reasons, and support their reasons with solid evidence" (p. 142).

Regarding the criteria of assessing writing proficiency of these tests, producing texts with grammatical complexity is crucial, and it shows writing ability of the learner, apart from other factors, such as content, idea organization, coherence and cohesion, grammatical accuracy, and vocabulary. As indicated in IELTS writing criteria, the writer is required to use "a mix of simple and complex sentence forms and make some errors in grammar and punctuation, but they rarely reduce communication" (British Council, IDP Education, & University of Cambridge, 2018, p. 1), and as noted in writing independent rubrics of TOEFL iBT Test that the writer needs to "display consistent facility in the use of language, demonstrating syntactic variety, appropriate word choice and idiomaticity, though it may have minor lexical or grammatical errors" (Educational Testing Service, 2018, p. 1). Therefore, the development and ability in writing essay with grammatical complexity is crucial for writing essay in English.

Definition of Grammatical Complexity

McWhorter (2007) points out that defining grammatical complexity of different language grammars is challenging since a grammar of one particular language might be less or more complex than another. This could lead to a confusion between complexity and difference. However, grammatical complexity can be mainly measured according to three aspects, namely, overspecification, structural elaboration, and irregularity.

Pallotti (2015) defines complexity “as the number of different elements and their interconnections (i.e. their systematic, organized relationships), which both produce a longer description of the text’s structure” (p. 120) and notes that the complexity can be assessed in terms of morphological complexity, syntactic complexity, and lexical complexity.

As noted by Biber and Gray (2016), in academic writing, grammatical complexity is “the increased use of ‘elaborated’ structures, consisting of dependent clauses added on to a simple independent clause. That is, a sentence is considered complex to the extent that it has multiple embedded subordinate” (p. 245).

Bulté and Housen (2012) refer complexity as “property or quality of a phenomenon or entity in terms of (1) the number and the nature of the discrete components that the entity consists of, and (2) the number and the nature of the relationship between the constituent components” (p. 22). It is also suggested that grammatical complexity can be divided into two main sources which are syntactic complexity and morphological complexity as shown in the figure below.

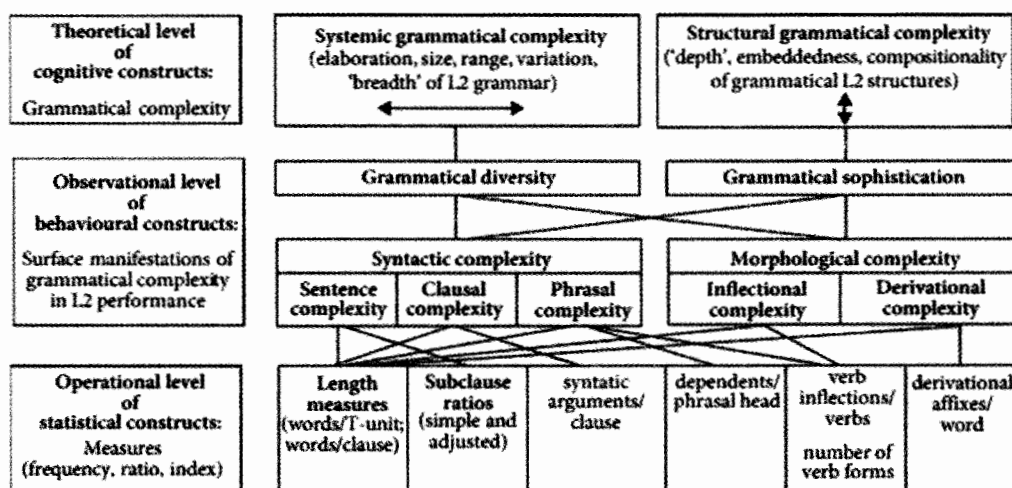


Figure 1: Grammatical complexity at different levels of construct specification

(Bulté & Housen, 2012, p. 27)

As mentioned by Newmeyer and Preston (2014), “most complexity researchers to date have backgrounds in either functional linguistics or sociolinguistics, or have applied issues around complexity to support some particular framework for syntactic analysis” (p. 1). Thus, it is important



to note that the main focus of this present research is on syntactic complexity by looking at sentence complexity and clausal complexity. The following section will discuss the measures of syntactic complexity in greater detail.

Measures of Syntactic Complexity

Ortega (2003) demonstrates that syntactic complexity is referred as "the range of forms that surface in language production and the degree of sophistication of such forms" (p. 492). In Ortega's (2003) study, mean length of T-unit (MLTU), mean length of clause (MLC), mean length of sentence (MLS), mean number of T-units per sentence (TU/C), mean number of clauses per T-unit (C/TU), and mean number of dependent clauses per clause (DC/C) were employed to measure syntactic complexity of written work produced by advanced level ESL and EFL students. Ortega reported that ESL writers tended to produce more syntactic complexity than EFL writers in terms of words per sentence (MLS), words per T-unit (MLTU), words per clause (MLC), and the number of clauses per T-unit (C/TU).

Storch (2009) explored the development of L2 academic writing of 25 students in an L2-medium university in Australia concerning the change of grammatical accuracy and complexity. For grammatical complexity, Storch measured the ratio of clauses per T-units (C/T) and the ratio of dependent clauses per clause (DC/C). It was found that there was no evidence of the students' improvement in terms of grammatical accuracy or complexity. This might be because the duration of the study was short and might not lead to the improvement for these aspects. However, this measure was also used in Ortega (2003) and Shaw and Ting-Kun Liu (1998). Shaw and Ting-Kun Liu (1998) point out that the increasing use of dependent clauses shows the greater syntactic complexity.

Similarly, Ji (2009) investigated the development of English writing of Chinese EFL students from sophomore to senior years. Two sets of argumentative essay written by 100 English major students from four universities in Shanghai were compared and analyzed in terms of fluency, syntactic complexity, lexical features, and accuracy. Regarding syntactic complexity, the ratio of clauses per T-unit (C/T) was measured. The results indicated insignificant improvement in terms of their T-unit complexity ratio. This might be because half of the participants did not attend writing course in their senior years, and the time limitation of the test (400-word essay in 45 minutes) had impacts on syntactic complexity of these writing learners.

In 2010, Lu summarized fourteen syntactic measures from the large set of measures that had been used in research studies conducted by Wolfe-Quintero, Inagaki, and Kim (1998) and Ortega (2003) as shown in the table below.

Table 1: The fourteen syntactic complexity measures automated (Lu, 2010, p. 6)

Measure	Code	Definition
<i>Type 1: Length of production unit</i>		
Mean length of clause	MLC	# of words / # of clauses
Mean length of sentence	MLS	# of words / # of sentences
Mean length of T-unit	MLT	# of words / # of T-units
<i>Type 2: Sentence complexity</i>		
Sentence complexity ratio	C/S	# of clauses / # of sentences
<i>Type 3: Subordination</i>		
T-unit complexity ratio	C/T	# of clauses / # of T-units
Complex T-unit ratio	CT/T	# of complex T-units / # of T-units
Dependent clause ratio	DC/C	# of dependent clauses / # of clauses
Dependent clauses per T-unit	DC/T	# of dependent clauses / # of T-units
<i>Type 4: Coordination</i>		
Coordinate phrases per clause	CP/C	# of coordinate phrases / # of clauses
Coordinate phrases per T-unit	CP/T	# of coordinate phrases / # of T-units
Sentence coordination ratio	T/S	# of T-units / # of sentences
<i>Type 5: Particular structures</i>		
Complex nominals per clause	CN/C	# of complex nominals / # of clauses
Complex nominals per T-unit	CN/T	# of complex nominals / # of T-units
Verb phrases per T-unit	VP/T	# of verb phrases / # of T-units

Note: # = The number of ; / = per

However, Ai and Lu (2013) noted that, from the table above, there are four measures, namely, CT/C, CT/T, C/S, and VP/T, shown to be poor measures for developmental indices.

Kim (2014) investigated L2 writing ability at different proficiency levels of 234 essays produced by ESL writers. For syntactic complexity, Kim employed the fourteen syntactic complexity measures summarized by Lu (2010, p. 6) as presented in Table 1 above. The results offer the understanding of complexity measures to distinguish linguistic complexity of L2 writing at different proficiency levels and the possibility of using these measures to analyze L2 writing of ESL writers.



Bulté and Housen (2014) explored the short-term development of L2 writing proficiency of 45 ESL writers. Syntactic complexity was measured in three aspects, that is, syntactic sentential complexity, syntactic clausal complexity, and syntactic phrasal complexity. For syntactic sentential complexity, length of sentential unit (i.e., mean length of sentence (MLS) and mean length of T-unit (MLTU)), sentence composition (i.e., simple sentence ratio (SSR), compound sentence ratio (CdSR), complex sentence ratio (CxSR), and compound complex sentence ratio (CdCxSR)), and proposition combining and clause linking (i.e., coordinate clause ratio (CCR) and subclause ratio (SCR)) were measured. For syntactic clausal complexity, mean length of finite clause (MLCfin) was measured. Lastly, for syntactic phrasal complexity, mean length of noun phrase (MLNP) was measured. In their study, the findings showed a wide range of complexity measures to understand L2 writing development of these ESL learners.

Seifoori & Fattahi (2014) compared grammatical complexity and clause types used in the articles written by English and Iranian writers. The ratio of the number of dependent clauses per T-unit (DC/T) to the number of independent clauses were measured and compared. The findings revealed that there was no significant difference. However, native English writers produced more adjective clauses than Iranian writers.

Tai (2015) investigated the L2 writing development in terms of syntactic complexity, accuracy, and fluency of 19 students enrolled in a content and language integrated learning class for 18 weeks. 57 written assignments from three different periods of time of the course (i.e., beginning, middle, and final) were collected and analyzed. Regarding measuring syntactic complexity, the ratio of clause per T-unit (C/T) and the ratio of dependent clauses per T-unit (DC/T) were measured. The results showed that these students improved their grammatical accuracy and fluency. However, they did not improve their syntactic complexity. This study shed some light on the L2 writing improvement regarding syntactic complexity to some extent.

Yang (2015) replicated the research framework proposed by Biber, Gray, and Poonpon (2011) that explored in the context of L1 and L2 student academic writing. Yang investigated the similarities and differences in terms of syntactic complexity of academic writing between L1 and L2 students. 128 essays from 16 L2 writers and 16 essays from L1 writers were compared. Finite dependent clauses, nonfinite dependent clauses, and dependent phrases were the main grammatical features that were analyzed. It was found that both groups of students used more dependent phrases (e.g., prepositional phrases as postmodifiers) than finite dependent clauses (e.g., finite adverbial clauses and finite complement clauses) and nonfinite dependent clauses (e.g., nonfinite noun modifying clauses). Yang's (2015) findings support the previous findings of Biber et al. (2011).

According to my literature review, however, there have not been recent studies investigating syntactic complexity of essay writing in the research articles in Thai EFL students. Therefore, in order to fill the gap, the present study aims to investigate the syntactic complexity of English essay writing of English major students and the clause types used of English essay writing produced by these EFL students. The main focus in this present research is on English major undergraduate students at Naresuan University, Thailand. To this end, the research questions thus were formulated as follows.

1. What is the syntactic complexity of English essay writing of English learners in terms of the ratio of clause per T-unit (C/T), the ratio of dependent clauses per clause (DC/C), and the ratio of dependent clauses per T-units (DC/T)?
2. What are the clause types used of English essay writing produced by these EFL writers?

Methodology

Participants

The participants of this study were 49 third-year English major undergraduate students who enrolled in essay writing course (205223) of the second semester of academic year 2016 at Naresuan University. All participants were EFL writing learners who had experienced studying basic writing course and paragraph writing course in their first year and second year, respectively. The English proficiency of the participants was between lower intermediate to intermediate.

Data collection

Regarding ethical issue, all participants were informed about the purposes of this research and what they were required to do. Then, they were asked to complete a consent form in class. They all understood that their participation was completely voluntary, and, at every stage, their names would remain confidential.

At the end of this writing course, every participant was asked to do the writing test. In this writing test, the participants were instructed to write an argumentative essay, in the range of 480-520 words, within three hours at one sitting and under the test conditions. The participants were allowed to use dictionaries and be given paper for note taking. The participants chose only one of the following topics.

1. Do you agree with the ban of alcoholic drinks selling near the educational institutions?
2. Some people believe that university students should be required to attend class. Others believe that going to class should be optional for students. Which side are you on?



3. Online dating will replace meeting someone offline. To what extent do you agree or disagree with this statement?

(The rubrics of writing assessment in this course is shown in Appendix 1)

Then, the written scripts were collected for further analysis.

Data analysis

In previous studies, there were many different measures of syntactic complexity that have been used, for example, the average number of words per sentence and the ratio of the number of subordinated structures in a piece of writing used in Li (2000), and the ratio of clauses per T-units (C/T) and the ratio of dependent clauses per clause (DC/C) used in Storch (2009), Ortega (2003), and Shaw and Ting-Kun Liu (1998).

This present study aims to explore the syntactic complexity of English essay writing and the characteristics of syntactic complexity used by Thai EFL learners. Syntactic complexity was operationalized in terms of use of compound sentences and complex sentences, and therefore the focus was at the sentence level, not word and phrasal level. Shaw and Ting-Kun Liu (1998) mentioned that the increasing use of embedding and subordination represents greater syntactic complexity. Analyzing the average sentence length (i.e. the average number of words per sentences) is not the main focus for this study since this essay writing course had already assigned students to write an essay in the range of 480-520 words. The researcher decided not to measure this aspect of writing. As indicated in Seifoori and Fattahi (2014), "clauses are a better indicator of grammatical complexity because a clause provides better insights into the complexity of a sentence; and the number of dependent clauses per t-unit has been used in most of the studies as an effective measure" (p.1701). In conclusion, the researcher in the present study decided to measure syntactic complexity by looking at 1) the ratio of clauses per T-unit (C/T), 2) the ratio of dependent clauses per clause (DC/C), and 3) the ratio of dependent clauses per T-unit (DC/T) as used in a number of research studies (e.g., Lu, 2010; Ortega, 2003; Seifoori & Fattahi, 2014; Shaw and Ting-Kun Liu, 1998; Storch, 2009; Tai, 2015) (see Appendix 2 for more details of guidelines for T-units and clauses). Furthermore, in order to explore the use of dependent clauses in greater detail, the researcher also decided to measure types of clauses produced by these EFL writers. In this study, the details of kinds of sentences and types of clauses were drawn mainly from Oshima and Hogue (2006).

It is important to note that since the participants in the present study were between lower intermediate to intermediate, they made a number and a variety of grammatical errors in their writing at a sentence level. Therefore, in measuring syntactic complexity, grammatical errors in the text were ignored because grammatical accuracy is not the main focus in the present study.

As a result, every T-unit and clauses with errors (e.g. problems with subject and verb agreement, subject or verb missing, and punctuation and capitalization problems) was counted as T-units and/or clauses. Moreover, in analyzing T-units, punctuation problems were ignored and the focus would be on grammatical structure.

In order to confirm the reliability of the study, another rater was recruited for coding. The inter-rater reliability reached 0.98, and this indicates excellent reliability.

Findings and Discussion

The present study investigated the syntactic complexity of English essay writing of English learners in terms of the ratio of clause per T-unit (C/T), the ratio of dependent clauses per clause (DC/C), and the ratio of dependent clauses per T-units (DC/T). The descriptive statistics of the syntactic complexity measures were calculated to answer Research Question 1. The detailed findings are shown in Table 2 and Table 3 below.

Table 2: The analysis of the number of T-units, independent clauses, and dependent clauses produced by EFL writers

	N	Mean	SD
Number of T-units	49	31.97	6.17
Number of independent clauses	49	31.97	6.17
Number of dependent clauses	49	26.09	6.91

Table 3: The descriptive statistics of the syntactic complexity of written text produced by EFL writers

	N	Mean	SD
C/T	49	1.84	0.45
DC/C	49	0.28	0.08
DC/T	49	0.84	0.28

As Tables 2 and 3 illustrate, the data suggests some extent of syntactic complexity of these participants' essay writing. However, it should be noted that the findings of this present study might be incompatible with the findings of other studies since this present study did not look at the change or the writing development as shown in the studies conducted by Storch (2009), Bulté and Housen (2014), and Tai (2015) or the comparison between native and non-native writers as found in Yang (2015). Nevertheless, this present study is similar to the studies by Ji (2009) and



Kim (2014) who also analyzed argumentative essay writing in their studies and the study by Seifoori and Fattahi (2014) who looked at the clause types used. The results of this present research prove that the use of these syntactic complexity measures is feasible to investigate the syntactic complexity from written texts produced by EFL writing learners.

To investigate Research Question 2, the research calculated the clause types used of English essay writing produced by these EFL writers, as presented in Table 4.

Table 4: The descriptive statistics of types of clauses of written text produced by EFL writers

Types of clauses	N	Mean	SD
1. Noun clauses	49	10.71	3.76
That clauses	49	9.44	3.54
If/whether clauses	49	0.29	0.68
Question clauses	49	0.99	1.39
2. Adverb clauses	49	8.57	3.98
Time clause	49	2.07	1.90
Place clauses	49	0.00	0.00
Clauses of manner	49	0.24	0.58
Distance clauses	49	0.00	0.00
Frequency clauses	49	0.02	0.14
Reason clauses	49	3.22	2.23
Result clauses	49	0.00	0.00
Purpose clauses	49	0.00	0.00
Conditional clauses	49	1.82	1.67
Contrast clauses of direct opposition	49	0.13	0.38
Contrast clauses of concession	49	1.06	0.98
3. Adjective clauses	49	6.82	3.71
Relative pronouns as subjects	49	5.20	3.30
Relative pronouns as objects	49	1.44	1.64
Possessive adjective clauses	49	0.00	0.00
Relative pronouns as objects of prepositions	49	0.00	0.00
Relative pronouns in phrases of quantity and quality	49	0.00	0.00
Adjective clauses of time and place	49	0.10	0.37

In Table 4, the result showed that the students produced an average of 11 noun clauses, 9 adverb clauses, and 7 adjective clauses. Noun clauses were produced the most, followed by adverb clauses and adjective clauses, respectively.

With regard to noun clauses, *that clauses* were produced the most (9 clauses). In terms of adverb clauses, *reason clauses* were produced the most (3 clauses), followed by *time clauses* (2 clauses) and *conditional clauses* (2 clauses). Regarding adjective clauses, *relative pronouns as subjects* were produced the most (5 clauses), followed by *relative pronouns as objects* (1 clause).

The findings emerging from the present study do not lend support to Seifoori and Fattahi (2014) whose research indicated that adjective clauses were produced the most, followed by adverb clauses and noun clauses, respectively. This might be due to the different types of writing between the present study and Seifoori and Fattahi's (2014) study (i.e., argumentative essay writing and article writing). The results of the present study are not totally unexpected. Noun clauses (i.e., *that clauses*) are mainly used since this type of clauses are always used as the object of the verb as in Thai language, for example, based on the written scripts of the present study, "I think *that almost of drinking students know about his or her limit.*", "Some students explain *that they can learn in their optional ways.*", and "Some people said *that the information of online users is quite reliable.*" In addition, since it is an argumentative writing, the participants need to agree or disagree with an issue, use reasons to support their opinion, and provide information to oppose arguments or to rebut to arguments in their writing. Therefore, as expected, *reason clauses*, *time clauses*, and *conditional clauses* are basically used.

Conclusion, Implications, and Recommendations

The current study investigated the syntactic complexity of English essay writing of English learners in terms of the ratio of clause per T-unit (C/T), the ratio of dependent clauses per clause (DC/C), and the ratio of dependent clauses per T-units (DC/T). The findings showed that these measures are proved to be feasible measures to explore the syntactic complexity of writing learners. In addition, the study investigate the clause types used of English essay writing produced by these EFL writers. It was found that noun clauses were produced the most, followed by adverb clauses and adjective clauses, respectively. The possible explanation for these findings is that *that clauses* are used the most since this might result from the first language transfer. Thai students at this proficiency level always translated from Thai into English in their writing, and *That clauses* are always used as the object of the verb as they used in Thai language. Furthermore, as mentioned earlier, it is expected that the use of *reason clauses*, *time clauses*, and *conditional clauses* are commonly used in argumentative essay writing. Writing students tend to use these clauses types to stand on their own issue and support it with their solid reasons and evidence.



The findings of this present research have pedagogical implications. Firstly, the syntactic measures employed in this study can be used as a guideline to assess syntactic complexity in writing classroom. Writing teachers can also encourage their students to recognize the importance of syntactic complexity, how their written scripts are assessed, and how they can improve their quality of their written texts in terms of syntactic complexity. Secondly, the findings of this research will be beneficial to essay writing courses in that writing teachers would focus on teaching writing correct dependent clauses, especially that clause, reason clauses, and relative pronouns as subjects for argumentative essay writing since these are the most frequent use of dependent clauses in this type of essays. Lastly, in order to increase the quality of writing, improving grammatical accuracy is needed since it also increases the quality of essay writing for writing learners.

The present study has a few limitations. Since this present study did not look at the change or the writing development, the comparison between native and non-native writers, or the differences among different proficiency levels of writing learners, the findings of this study might not be compared with the findings of other studies. Future studies should try to compare the change of syntactic complexity before and after attending essay writing course, compare the differences of syntactic complexity across different types of essay writing, investigate the syntactic complexity of other types of essay writing, for example, narrative essay, descriptive essay, or definition essay writing, and the differences among different proficiency levels of writing learners. Moreover, since this present research did not look at content, coherence and cohesion, and grammatical accuracy, this might not fully reflect the quality of essay writing. Therefore, further researchers should include syntactic complexity with these elements of good writing.

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Appendix 1: Rubrics of writing assessment in this writing course

Essay Writing Rubric (total 100)

Introductory Paragraph (10 points)					
	There is a clear thesis statement that draws attention of the reader AND there is background information related to the thesis statement. (10 points)	The thesis statement is clearly presented with background information related to the thesis statement. (7.5 points)	The thesis statement is clear but background information is not related to the thesis statement. (5 points)	The thesis statement is not clear as well as background information. (2.5 points)	There is no trace of thesis statement AND background information. (0 points)
Body (40 points)					
Topic sentence (8 points)	The topic sentence is clearly presented in every paragraph. (8 points)	The topic sentence is pretty clear in every paragraph. (6 points)	There is topic sentence in every paragraph but it is not clear. (4 points)	There is topic sentence in some paragraphs. (2 points)	There is no trace of topic sentence. (0 points)
Organization and cohesion (10 points)	All ideas are well-developed or put in effective order. (10 points)	Few ideas may not be in the most effective order. (7.5 points)	More than half of the ideas are not in the most effective order. (5 points)	The majority of the ideas are not in the most effective order. (2.5 points)	There is no evidence of order of idea. (0 points)
Supporting ideas (12 points)	Exceptionally well-presented and argued. Ideas are detailed, well-developed, supported with specific evidence & facts, as well as examples	Well-presented and argued. Ideas are detailed, developed and supported with evidence and details, mostly specific.	Content is sound and solid; ideas are present but not particularly developed or supported.	Content is not sound. There are supporting ideas but they don't relate to topic sentence.	There is no supporting idea. (0 points)



	and specific details. (12 points)	(9 points)	The evidence is general or vague. (6 points)	(3 points)	
Coherence (10 points)	There are effective transition word(s) or phrase(s) used between paragraphs AND within the paragraphs. (10 points)	There are transition word(s) or phrase(s) used between paragraphs AND within the paragraphs. (7.5 points)	There are effective transition word(s) or phrase(s) used between paragraphs OR within the paragraphs. (5 points)	There are transition word(s) or phrase(s) used between paragraphs OR within the paragraphs. (2.5 points)	There is no transition word or phrase. (0 points)
Concluding Paragraph (10 points)					
	There is a summary or restatement of all important points from the essay. <i>There is an effective technique for memorable thought. (10 points)</i>	There is a summary or restatement of all important points from the essay. (7.5 points)	There is a summary or restatement of some important points from the essay. (5 points)	There is a summary or restatement of few important points from the essay. (2.5 points)	There is no summary or restatement of the important points from the essay. (0 points)
Overall (40 points)					
Sentence structure (10 points)	Write sentences with strong compound and complex structure. (10 points)	Write sentences with compound and complex structure. Most simple and compound sentences are correct, but complex structure may have some mistakes. (8 points)	Write simple and compound sentences but is unable to form complex sentence. (6 points)	Write mostly simple sentences and attempts to write compound sentence. (4 points)	Write only simple sentences or fragments without attempts to write compound sentences. (2 points)
Grammar	Write good sentences with correct grammar most of the time. The	Can use mostly correct grammar. There are mistakes, but the	Make some grammatical mistakes. The sentences are	Makes many grammatical mistakes. The sentences are difficult to	The sentences are not comprehensible because they



(16 points)	sentences have good structure. (16 points)	sentences are easy to understand. (12 points)	sometimes difficult to understand. (8 points)	understand. (4 points)	are too many grammatical mistakes. (0 points)
Punctuation, capitalization, & spelling (4 points)	Almost no mistakes in punctuation, spelling and capitalization (4 points)	A few mistakes in punctuation, spelling and capitalization (3 points)	Some mistakes in punctuation, spelling and capitalization (2 points)	Many mistakes in punctuation, spelling and capitalization (1 points)	Uncountable continuous mistakes in punctuation, spelling and capitalization (0 points)
Vocabulary (10 points)	Use simple and common words correctly. Usually use difficult words correctly. (10 points)	Use simple and common words correctly. Often use difficult words correctly. (8 points)	Use simple or common words correctly. Rarely use difficult vocabulary. (6 points)	Use only simple or common words and use them correctly. (4 points)	Use only simple or common words with incorrect meaning. (2 points)
Additional topic (if any) (5 points)					
Reference, Citation, & Quotation	Variety of reference with no error in in-text citation and quotation (5 points)	Variety of reference with few errors in in-text citation and quotation (4 points)	Variety of reference with many errors in in-text citation and quotation (3 points)	Limited reference with few errors in in-text citation and quotation (2 points)	Limited reference with many errors in in-text citation and quotation (1 point)



Appendix 2: Guidelines for T-units and clauses

Note: this guideline was also used in Chuenchaichon (2011)

T-units

- A T-unit is defined as "one main clause plus whatever subordinate clauses happen to be attached to or embedded within it" (Hunt, 1966, p. 735).

Example: I must get up early /when I was a high school student.

Main clause

subordinate clause

1 T-unit

- Every single run-on sentence is counted as 1 T-unit.

Example: Life at university is good I have a lot of friends I like it.

1 T-unit

1 T-unit

1 T-unit

- "For sentence fragments, if the verb or copula is missing, count the sentence as 1 T-unit with an error. If an NP is standing alone, attach it to the preceding or following T-unit as appropriate and count as an error. If a subordinate clause is standing alone, attach it to the preceding or following sentence and count it as 1 T-unit with an error" (Polio, 1997, p. 138).

Examples: Life at university very interesting.

When you are in university. You have many friends.

1 T-unit

- "Count S-nodes with a deleted complementizer as a subordinate clause as in: I believe that A and (that) B = 1 T-unit" (Polio, 1997, p. 138).
- Direct quotes are counted as:

Peter said, "A and B."

1 T-unit

1 T-unit

- Every single independent clause that is joined by transitional devices (i.e. conjunctive adverbs) is counted as 1 T-unit.

Example: Life at university is free; for example, I can do anything I want.

1 T-unit

1 T-unit

- "Count T-units in parentheses as individual T-units" (Polio, 1997, p. 139).
- Interrogative sentences are counted as T-units.
- Imperative sentences are counted as T-units.
- Exclamatory sentences are counted as T-units.

Clauses

- A clause is defined as a group of words that contains a subject and a predicate.
- In this study, clauses are divided into two kinds as shown below.

1. Independent clause

An independent clause (or main clause) is a unit that contains a subject and a predicate, and it can stand by itself.

Examples: There are many universities in Thailand.

I really enjoy studying at university.

2. Dependent clause

A dependent clause (or subordinate clause, embedded clause) is a unit that contains a subject and a predicate, but it cannot stand by itself. It is generally attached to an independent clause and contains subordinating conjunction. In this study, dependent clauses are divided into three kinds as shown below.

2.1 Adverb clause

Example: When I have a problem, I can talk to my teacher.

2.2 Adjective clause

Example: At university, I can choose the subjects that I am interested in.

2.3 Noun clause

Example: I think (that) life at university is different from life at high school.

- “Only an imperative does not require a subject to be considered a clause” (Polio, 1997, p. 139).
- “In a sentence that has a subject with only an auxiliary verb, do not count that subject and verb as a separate clause (or as a separate T-unit. (e.g. John likes to ski and Mary does too; John likes to ski, doesn't he?; John is happy and Mary is too)” (Polio, 1997, p. 139).

Note:

- Since the participants in the present study was between lower intermediate to intermediate, they made a number and a variety of grammatical errors in their writing at sentence level. Therefore, in measuring syntactic complexity, grammatical errors in the text were ignored because grammatical accuracy is not the main focus in the present study. As a result, every T-unit and clauses with errors (e.g. problems with subject and verb agreement, subject or verb missing, and punctuation and capitalization problems) was counted as T-units and/or clauses.
- In analyzing T-units, punctuation problems were ignored and the focus would be on grammatical structure.

