

Taxis and Logico-semantic Relations in EFL Student's Writing Compared to an Expert's

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ABSTRACT

In writing, students are expected to be able to deliver meaning in context. One of elements affecting good quality of writing is the development of clauses. Scholars have long been interested in studying clause complexes in various texts; however, research focusing on writings produced by students in Indonesia seems under-explored. Therefore, this study aims to analyze clause complexes produced in a high school student's text compared to an expert's concerning taxis and logico-semantic relations. This qualitative study employed a document analysis through systemic functional linguistics perspective (Halliday & Matthiessen, 2014). The findings show that there is a difference in the percentages of clause complexes produced by the student (50%) and the expert (70.83%). Notwithstanding, the student is able to produce parataxis and hypotaxis of two, three, and four clauses in order to deliver meanings. Moreover, like the expert's text, the student also produces types of logico-semantic relations: expansion and projection. In conclusion, the student owns the ability to construct a meaningful text by using a variety of relations in clause complexes. Comparing texts written by students from different levels – high, middle, and low achieving students – to expert texts is recommended for future research so that students' practices can be enhanced, and the obstacles can be both identified and overcome.

Keywords: clause complexes; taxis relation; logico-semantic relation; a student's text; an expert's text

INTRODUCTION

English language learners benefit from mastering how clauses are constructed since it helps them to produce good quality of writing, and it enables them to deliver meaning in context. In order to be able to produce and understand the meaning of text, analyzing sentences is considered crucial in the light of Systemic Functional Linguistics, henceforth; SFL (Halliday and Matthiessen, 2004; Eggins, 2004). Troyan et al (2022) emphasizes that SFL builds critical literacy by emphasizing on the importance of genre awareness and critical examination of ways in using language patterns to achieve goals in context. The genre helps learners view oral and written communication in terms of contextually bound language choices so that they can decide what strategies to critically use in evaluating texts and engage in meaning making independently and innovatively to have contextual communication (Bakhtin, 1986; Hasan, 1996). Thus, in composing good sentences or clauses, students' focus is not expected to be limited on the understanding of knowledge on structure but also on the meaning and how the meaning is delivered. In other words, to make a meaningful sentence, students need to concern on how the structure constructs meaning in order to get a sense whether the sentences constructed promote coherence and cohesion.

Regarding this importance, there are two systems in SFL involved in the formulation of clause complex. The systems are known as taxis (interdependency degree) and logico-semantic relation. According to Halliday and Matthiessen (2004), the two systems are important to examine the relation between clauses. First, the interdependency relationship that exists between clauses and connects them to form a clause complex is described as taxis. Parataxis, one type of taxis, shows that clauses are equally related and independent entities. Another option is hypotaxis showing that

clauses are related dependently in a connection where there are dependent and independent clauses. Secondly, when there is a connection in the form of specific types of meaning which links clauses in a clause complex, it is called logico-semantic relation. Expansion, the first type, occurs when one clause expands another clause's meaning, whereas a clause quotes the meaning of another. Expansion also has some types; they are elaboration, extension, and enhancement. In this relation, a clause may project a meaning, or it may reflect a thought.

Halliday and Matthiessen (2014) explained that the use of clause complexes helps making meaning in logical functions. When students use a variety of clauses, it reflects that they are able to deliver meaning in a more logical way rather than a single unit of separated connection between the clauses. A communicator who has a solid understanding of clause complexes may arrange information in a more compressed and more reasoned conduct, allowing them to more subtly accomplish their communicative goal (Halliday and Matthiessen, 2004). Moreover, being able to understand and apply clause complexes in writing serves as a bonus to students' language learning since it relates much to the ability of meaning making (Teruya, 2009). This will, in turn, lead readers or listeners to arrive at the meaning intended.

The importance of the issue has received scant attention from scholars who have worked in the area of clause complexes in students' text. Most of studies conducted have been done to university students learning academic writing such as learning Japanese as a foreign language (Teruya, 2009), research article (Srinivas, 2008, 2009) and English for Specific Purposes (Baklouti, 2011; Srinivas, 2006; Stuart-Smith, 2007). More relevant studies come from Leong and Geok (2005) who analyzed and compared the occurrence of clause simplex and clause complex in Singapore secondary school students' English exposition texts. The results showed that weak and effective writers used clause simplexes and complexes very differently due to different understanding of conjunction and clausal relations. In addition, (Anggraeni et al, 2018) conducted a study to analyze sentence construction in students' descriptive text in one of vocational schools in Malaysia. It is found out that from students' descriptive texts analyzed, simple sentences, fragments, and clause complexes consisting of parataxis and hypotaxis are identified.

Concerning this as an issue and little research has focused on high school students' writings especially in Indonesia, the researcher is interested to conduct a study on taxis and logico-semantic relation analysis of Clause Complex by comparing a high school student's text and an expert's. Reflected from those literature and previous studies, being familiar with clause complexes and relation between clauses (logico-semantic relations) is a good source for the success of meaning-making in communication. They are subjects that require more concentration and focus to comprehend. Furthermore, given that Indonesian recent educational curriculum implemented, *Kurikulum 2013* and *Kurikulum Merdeka*, encourages students to master language in the stage of meaning making through Genre Based Approach and requires students to write different genres with each different functions (Zahra et al, 2021), it is expected that this study will enrich literature in the field and provide insights for Indonesian education practitioners to more integrate meaning-making elements in teaching language, especially teaching writing.

METHODS

The current study employed a qualitative descriptive analysis through a document analysis on investigating the portrayal of taxis and logico-semantic relations in selected student's text and expert's. Qualitative research is appropriate to be used in this current research since it explores and understands meaning derived from social or humanitarian issues analyzed based on themes, in this case the researcher uses Halliday and Matthiessen's (2014) systems of clause analysis, as well as interpreting the meaning of the data (Creswell et al, 2007; Gillham, 2000). To be able to arrive at the data description and interpretation, document analysis is used by comparing the occurrence of clause complexes contained in an expert biographical text to a student' biographical text selected from a public senior high school in West Java.

The expert text is entitled *21 centuries heroes: STEVE IRWIN* (appendix 1) taken from student book published by Cambridge University Press, 2014 (authored by Herbert Puchta, Jeff Stranks, and Peter Lewis-Jones) while the student's text is entitled *Hasna Nafisah*, a biographical text written by the student in which she tells her biography (appendix 2). The expert text was selected since the language used is convenient for the level of high school students in addition to it contains a variety of clauses and logico-semantic relations. Meanwhile, the student's text was believed to be powerful enough to be juxtaposed with the expert's.

In order to analyze the sources, each biographical text – the expert and student's text – was each analyzed to see the occurrence of clause complexes by looking at two systems, taxis and logico-semantic relation by breaking down the whole text into clauses. The occurrence of taxis was firstly categorized and then the logico-semantic relation is seen by referring both to clause formulation analysis as well as the analysis symbols by Halliday & Matthiessen (2014). For taxis analysis, when the existence of parataxis was identified, the beginning clause uses the symbol "1," while the remaining clause uses the symbol "2."

In addition, when a connection of dependency was recognized, the main or independent clause is labeled α while the secondary or dependent one is symbolized by β . Regarding the logico-semantic, expansion and projection were analyzed. Expansion includes elaboration (symbolized by $=$), extension (symbolized by $+$), and enhancement (symbolized by x). Meanwhile, projection includes locution (labeled with “) is where where a clause projects speech, and the idea (labeled with ’) is where a clause reflects thought. After analyzing each text, the total occurrence of taxis and logico-semantic relations in each student and expert's text is totaled. Then, a comparative analysis is made to see the similarities and gaps between how the expert makes and delivers meaning through clauses and how students do. The results were described based on Halliday & Matthiessen's (2014) systems of clause analysis. Finally, the implication of the analysis is made.

RESULTS AND DISCUSSION

This section is presented by referring to two main systems: taxis and logico-semantic relation beginning with each description on the expert's text and is continued to the student's text. In order to provide clear results of the analysis, the description provided is organized through representations in each text's paragraph.

1. Taxis and Logico-semantic Relations in Expert's Text

Regarding the taxis, after the whole expert's writing is broken down into clauses, it is found out that there are 17 clause complexes out of 24 sentences in the text. In other words, 70.8 % of the text consists of clause complexes while the rest is simplex. Based on the results of analysis, the expert's text contains a variety of parataxis, hypotaxis, and logico-semantic relations. In the first paragraph, the expert's text contains three clause complexes. The first clause complex has hypotaxis which is presented by having enhancement as logico-semantic relation, in that the author gives circumstantial (time) to an event that happened. In the second clause complex, the author has hypotaxis in which there is elaboration stating more information defining *Steve*, the subject of the sentence. Similarly, these taxis and logico-semantics relations also exist in the last clause complex in paragraph 1. The author gives more information in the second clause to the noun mentioned in the first clause.

Moreover, there are two clause complexes in the second paragraph. The first clause complex is hypotaxis and the author provides elaboration of a noun mentioned in the dominant clause. Meanwhile, for the second clause complex, there are two layers and both of the layers are hypotaxis. Logico-semantic relation of elaboration is used by the author in the first layer in order to express that there is further information given to the noun mentioned in the dominant clause, too. In the second layer, the author gives circumstantial information (time) of the action mentioned in the first clause complex.

The third paragraph is the one containing more clause complexes; both hypotaxis and parataxis exist here. In the first clause complex, the author provides additional information to the first clause by using *and*, and the author gives information about the situation (enhancement) in the second clause. The second clause complex has parataxis with logico-semantic relation of extension where the author adds new information by using *and*. The third and fourth clause complexes have hypotaxis; the author gives information about circumstantial (time) meaning enhancement in the third while he gives more elaboration in the forth clause complex. Lastly, the last clause complex in this paragraph is parataxis and the author gives additional information to the initial clause in the subsequent clause.

Similar to the third paragraph, the fourth also has five clause complexes where clause complex 1, 2, 4, and 5 are hypotaxis, and clause complex 4 is parataxis. The types of logico-semantic relations used by the author vary too. In clause complex 1, the author gives information about circumstantial in the second clause (elaboration); in clause complex 2, the author give more information on a noun mentioned in the dominant clause (elaboration); in clause complex 3, the author gives additional information to the first clause by using *and* (extension), in clause complex 4, the author expresses sayings stated by the subject (locution); and in clause complex 4, the author gives circumstantial (place) information (enhancement).

In paragraph 5, there are two clause complexes: hypotaxis and parataxis. In the first clause complex, the author gives additional information to the first clase, and in the second clause complex (extension), the author gives circumstantial (place) information (enhancement). Thus, From the 17 clause complexes, the logico-semantic relations among them vary; expansion and projection. Related to expansion, there are 7 clause complexes having enhancement, 4 clause complexes having extension, 6 clause complexes having elaboration, and 1 clause complex having locution. Each of the samples can be seen in the following table, while the complete analysis is provided in the appendix 3.

TABLE 1. Clause Complexes in Expert's Text

No		Clauses	Taxis	Logico-semantic relations
1	α	On September 4 2006, Australian TV presenter Steve Irwin died	Hypotaxis	enhancement
	$\times\beta$	while filming around the Great Barrier Reef		
2	$=\beta$	Ironically, for a man who had spent his life chasing some of the world's most deadly animals,	Hypotaxis	elaboration
	α	Steve wasn't killed by a great white shark or some poisonous snake		
3	α	But there was so much more to him than the loud,	Hypotaxis - elaboration Hypotaxis - enhancement	
	$=\beta \alpha$	who shouted 'Crikey'		
	$\times\beta$	each time he got too close to the jaws of an angry croc.		
4	1	His parents ran a small nature park in Australia	Parataxis	extension
	+2	and by the age of eight he had already wrestled with his first crocodile and learned how to handle deadly snakes.		
5	α	He often said	Hypotaxis	locution
	$"\beta$	that this was the side of his job he most cared about.		

2. Taxis and Logico-semantic Realations in Student's Text

The student's text is entitled *Hasna Nafisa* written by a senior high school student who told about her biography. Similar to the expert's text, the student's text was broken down into clauses in order to analyze taxis and logico-semantic relations that exist in the clause complexes. From the analysis of the student's text containing three paragraphs and 6 sentences, it is found that there is one clause complex in each clause, and the clause complexes vary in that two of them consist of layers.

Similar to the expert's text, types of logico-semantic relations found in *Hasna Nafisa* also vary: locution, enhancement, extension, and expansion. Besides having this variety, the student text's clause complexes have layers. As can be seen in the analysis above, the first clause complex contains three hypotaxis. In the first hypotaxis, the student tells about her life motivation put in between the quotation marks which shows that the students express an idea on how she motivates herself. In addition, in the second hypotaxis, the student tells reasons why she comes up with that motivation. Meanwhile, in the last hypotaxis, she expresses again an idea of principles underlying her motivation. The taxis layers also happen in the clause complex in the second paragraph. Firstly, the student has hypotaxis with enhancement relation by telling the circumstantial (time) of an event (she ranked 1st place in class). Secondly, the student has parataxis which shows by adding information (extension) to the clause *she ranked 1st place in class*. For the last clause complex, in the third paragraph, the student has one taxis layer only, parataxis, where the student shows two equal ideas by adding one information to the previous clause stated (*She has many books and her favorite book is "The Perks Of Being A Wallflower" by Stephen Chbosky*). Each of the samples can be seen in the following table, while the complete analysis is provided in the appendix 4.

TABLE 2. Clause Complexes in Student's Text

No	Clauses	Taxis	Logico-semantic relations
1	α Hasna's life motivation is	Hypotaxis - locution - enhancement - locution	
	β α "I must survive"		
	$\times\beta$ α because she thinks		
	β that she needs to survive every condition to gain an achievement.		
2	$\times\beta$ When she was in the third grade of junior highschool,	Hypotaxis - enhancement Parataxis - extension	
	α 1 she ranked 1st place in class,		
	+2 and 5th place in parallel based on academic score.		
3	1 She has many books	Parataxis - expansion	
	+2 and her favorite book is "The Perks Of Being A Wallflower" by Stephen Chbosky		

Based on the findings of this study, the summary of occurrences of clause complexes in the student text and expert text can be seen in this following table.

TABLE 3. Summary of clause complexes in expert text and student text

Items		Expert text (%)	Student text (%)
1	Simplex	29.16	50
2	Clause complexes	70.83	50
2.a	Clause complexes of two clauses	94.11	33.33
2.b	Clause complexes of three clauses	5.9	33.33
2.c	Clause complexes of four clauses	-	33.33

From the data above, it can be seen that the expert created clause complexes (70.83%) more than clause simplexes (29.16%) meanwhile the student' clause complexes and simplexes in the text are equal; each of which is produced in half of the text (50%). These differences are not that significant to state that the student's text is categorized below standard, for in fact the student is able to produce some layers of clause complexes consisting of two clauses, three clauses, and four clauses; each of which is equally produced, once (33.33%) in the text. Meanwhile, the majority of the expert text consists of 94.11% of clause complexes of two clauses, 5.9% of clause complexes of three clauses, and there is no clause complex of four clauses. Considering the student' text was written by Indonesian student who is English nonnative while the expert text was authored by the native speaker of English, the percentages obtained show that the student has understanding on how to deliver ideas in different ways in order to reach effective meaning making so that the readers of the text can understand and arrive at the same points meant by the writer.

The logico-semantic relationship between the expert's text and the student's text is also compared in order to see how the taxi system captures the dependency or independency relationships between clauses. There are two choices: hypotaxis and parataxis. According to Eggins (2004), the structure of logico-semantic relations illustrates the relation of meaning, or the ways in which independent or dependent clauses contribute to the experiential meanings of the clauses they connect to. The table below contains information about the logical and semantic relationships in the text.

TABLE 4. Parataxis and hypotaxis in clause complexes

Taxis		Expert text (%)	Student text (%)
Total Parataxis		19.04	33.33
Parataxis	<i>Expansion</i>	100	100
	<i>Projection</i>	-	-
Total Hypotaxis		80.96	66.67
Hypotaxis	<i>Expansion</i>	92.86	50
	<i>Projection</i>	7.14	50

Based on the table clause complexes above, total parataxis (19.04%) in clause complexes produced by the expert in the text is less than the total of hypotaxis (80.96%). Similarly, this comparison also happens to the student' text where the total parataxis (33.33%) used is less than the total of hypotaxis (66.67%) produced. From these numbers, it can be seen that both the expert and student produced more hypotaxis since they attempted to provide their readers with the event's main topics. In a nutshell, the purpose of using more hypotaxis is to maintain a strong connection with the primary sense without adding any extra information. The works of the paratactic form, as stated by Halliday and Matthiessen (2014), is for expressing what is said, while the hypotaxis is to

indicate the meaning or the summary. In order to understand the meaning of the writings, the readers are required to pay more attention to hypotaxis than parataxis. Notwithstanding, both the expert and student also used parataxis in order to clarify their ideas by providing a lot of extra details for their readers to understand the meaning of information they meant.

Regarding the case of expansion and projection, parataxis is primarily associated with the expansion because both the expert and the student attempted to make statements instead of expressing their thoughts. This also happens to the expert text's hypotaxis where the use of projection (7.14%) is very limited meanwhile the use of expansion (92.86%) takes place in most of the text's part. On the other hand, the student uses the same portion of projection (50%) and expansion (50%) in hypotaxis. This may have strong relation to the genre, biography, where projection is not that required and needed. It is different from narrative where lots of projection is needed in order to report statements and ideas by the characters. Joyce and Feez (2016) stated narratives as stories about one or a group of characters (human or animal) overcoming problems, in addition to how situations are reacted, how cultural and social norms are discovered, and how audiences are engaged. In order to react to the social experiences, there must be some ideas and utterances required. However, the student's choice of using the projection reflects that certain structure is not limited to certain text; instead, it serves as a good source for delivering certain meaning and understanding.

Even though studies on clause in high school student's writing is limited to be found, findings of this study are consistent with Joma and Bidin's (2019) finding on logico semantic relations in university students' citations which involves expansion, projection, and a combination of projection and expansion. Similarly, Yuniar (2018) also discovers those logico semantic relations in university students' essays. What this research and the two previous studies reveal is that the use of those types of taxis and logico-semantic relations reflects the effectivity of using language to convey meanings – in other words, using language in context. This confirms what Ngongo (2018) figures out, in analyzing students' thesis writing, that using variety of taxis as well as its logico semantic relations enable students to use different processes of verbal and mental, and this results in text cohesion bringing meaningful communication. Additionally, it demonstrates how students begin to develop the ability to connect new information introduced from earlier information found in the preceding clauses to a sense of cumulative development of knowledge (Eggins, 2004; Emilia, 2014).

Teruya (2009), who also figured out variety of clause complexes with different functions in Students' written texts, strengthens results of the current research in that rhetorically oriented language logic can be achieved through this kind of functional analysis as a tool for meaning making. It reflects how language is organized is able to present things in meaningful way. In accordance with the Systemic Functional Linguistics theory, language is labeled as a multidimensional phenomenon to enable human use language in context through meaning making process (Halliday, 1978; Matthiessen, 2007). Understanding meaning delivered in the wording of clause complexes helps students to grasp the constantly changing flow of meaning (Halliday, 1992) or languaging (Swain, 2006). According to the theory, students must consider alternatives to the barely combined two-clause development. They have to figure out how to explicitly utilize grammar to support their personal linguistic comprehension by paying attention to taxis and logico-semantics relations in order to comprehend and deliver more complex forms of clause complexes.

CONCLUSION

This study investigated clause complexes in expert's text and student's. In doing the analysis, the study focused on two systems, taxis and logico-semantic relations that exist in the clause complexes. The results of analysis show that there is a slight distinction in the percentages of clause complexes produced by the expert (70.83%) and students (50%). However, even though the student's text consists of 50% clause simplex and 50% clause complexes, the student is able to produce clause complexes of two clauses, three clauses, and four causes in order to deliver meanings of what was written. Moreover, like the expert's text, the student also produced some types of logico-semantic

relations, expansion and projection, which reflect her ability in delivering meaning through certain systems of function. Therefore, it is suggested that English language teachers establish explicit teaching to provide students with sufficient knowledge on theory and practice in writing through genre-based activities, like the curriculum suggests. Furthermore, there is a need to encourage students taking advantages of using clause complexes in their writing, regardless the genre types, so that they are able to present and deliver language in context.

Future research should compare clause complexes produced by experts and students in two texts belonging to the same genre, as this study's scope is limited and does not permit generalization. It is recommended that future research in the field of study conduct the same analysis by looking at three levels of student's text – texts written by high-achieving, middle-achieving, and low-achieving students. Adding some other variables such as students' educational background, or investigating students' texts of the same level in different populations is recommended for future research.

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