Transitivity Analysis of Eleventh-Grade Students' Explanation Texts at One of Vocational High Schools in Klaten

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Abstract
This study aims at discovering the transitivity processes that appeared in the explanation texts that were written by the eleventh-grade students at one of the vocational high schools in Klaten and the most dominant type of processes applied. The data of this study were ten explanation texts written by the respondents. Furthermore, the descriptive quantitative method was used to analyze the data. The results of this study discovered that there were four processes that appeared in all of the texts. The processes were material processes which appeared 81 times (59.12 %), relational processes 40 times (29.19 %), mental processes 11 times (8.02 %), and existential processes five times (3.65 %). Hence, the most dominant process applied was material processes. This showed that students were aware of how explanation text should be written based on the meaning and function, which is explaining the process of how a phenomenon happens or works.
Keywords: eleventh-grade; explanation text; transitivity analysis; vocational high schools

INTRODUCTION

Writing is an important skill in English since it is a tool for communicating knowledge (Hosseini et al., 2013, p. 10). Linse (2005, p. 98) mentioned that writing is a combination of process and product to discover the ideas and organize them into sentences and paragraphs. It is also considered an important skill in the language since it is "the realization of communicating ability" (Depdiknas, 2003, p. 14). How the ideas are organized by writers to communicate the knowledge can be discovered in writing. Therefore, it can be the criteria of education success since it shows whether the writers have been able to communicate the knowledge properly through writing. Since writing is an essential language skill, the Indonesian curriculum requires students to write various types of text (Gintings, 2015, p. 1). One of the texts that students have to learn is explanation text.

Knapp and Watkins stated that explanation text is aimed at understanding the world and how it operates (2005, p. 125). It explains the process of how a phenomenon happens. In creating an explanation text, the writers are required to demonstrate their knowledge and understanding of the phenomenon they want to explain (Nesi & Gardner, 2012, p. 36). Due to this reason, the writers have to think critically to explain the phenomenon based on their understanding. Therefore, the students have to think critically to explain their knowledge about a certain phenomenon, and they have to express their knowledge in proper sentences or paragraphs. In this case, they still have difficulty expressing their ideas in sentences. This difficulty is faced by most students, such as students at one vocational high school. They sometimes have difficulty in choosing suitable words for an exact meaning due to their lack of English vocabulary.

As a result, they have a hard time creating explanation text using the language features of the text and also applying the schematic structure. Some students have difficulties in applying the correct tense and also using the appropriate words for some sentences, especially for the verbs. While for the schematic structure, at some time, they had difficulties in differentiating procedure and explanation text, so they had ever substituted the explanation part with steps of doing something. In the class, the language features taught mostly focus on tenses and the schematic structure.

Gerot and Wignell explained that the language features of explanation text are focusing on generic human and non-human participants, using the simple present tense, using material and relational processes, and using internal conjunctions (1994, p. 212). From the language features that have been mentioned, some of the features are included in the systemic functional linguistics that was introduced by Halliday (1994). The grammar in systemic functional linguistics is different from the traditional or formal grammar that focuses on rules for producing correct sentences (Gerot & Wignell, 1994, p. 4). In systemic functional grammar (SFG), the language is described in actual use and focuses on the text and context, which deals with how the structure of a sentence constructs meaning.

In SFG, there are three different meanings proposed under the name of the metafunction. Those meanings are ideational, interpersonal, and textual meanings. Gerot and Wignell (1994) explained that ideational meanings are the meaning of phenomena or about how is going on (p. 12). This meaning is about how writers express their experiences in language. In comparison, interpersonal meanings are the meanings that express speakers' attitudes and judgment. It is related to how the speakers or writers act with others and how social relations are created. For textual meaning, it is about the relation of language to the verbal or situational environment.

Among these meanings, there is one meaning which is related to the problems such as difficulties in choosing the proper words, especially the verbs and expressing their ideas into sentences that were faced by students at one of vocational high schools in Klaten in creating texts. These problems occurred when the teacher asked them to write an explanation text, which resulted in them working on assignments slowly. Furthermore, the discussed meaning is ideational. It concerns how writers express their experience or knowledge of the language. In ideational meaning, the meaning of the language is

influenced by the topic of discourse, which is realized in wording through participants, Processes, and Circumstances (Gerot & Wignell, 1994, p. 52). These three categories of wording are included in the transitivity system.

The transitivity system can be used to understand how clauses are used or organized by the writer to achieve a certain goal (Pramono, 2019, p. 132). It may explain how students express their ideas in sentences. Furthermore, processes are central to transitivity (Gerot & Wignell, 1994, p. 54). Processes are important since it represents the meaning of each clause or sentence in the transitivity. Besides, it is realized by verbs which students sometimes find it difficult to apply the correct verb for certain meanings.

Therefore, the analysis of this study applies systemic functional linguistics focusing on transitivity analysis. It was intended to discover which type of processes were applied by the students in their explanation texts. After the processes applied in the texts were discovered, the most dominant process applied in the texts was also discovered in this study. Moreover, this study may contribute to the development of the explanation learning process after discovering students' problems in creating explanation text, especially in applying the language features and the schematic structure.

LITERATURE REVIEW
Transitivity
Definition of Transitivity
Halliday (1994) mentions that transitivity is a grammatical system that expresses the world of experience into several types of processes that can be arranged (p. 106). The processes of intransitivity are able to show how the context of the situation is constructed. While Eggins (2004) explains, that transitivity represents what is being talked about and how the topic is achieved or constructed (p. 249). Consequently, the meaning of transitivity is influenced by the topic. From the definitions of transitivity above, the researcher concludes that transitivity is a system that shows how the context is achieved through the processes.
Types of Transitivity
There are different kinds of contexts or experiences that can be expressed through sentences. Therefore, there are seven processes identified by Halliday that have different meanings (Gerot & Wignell, 1994, p. 54). The processes of the transitivity system are shown as follows:
1.   Material Processes
Gerot & Wignell explained material processes are the processes of doing. These processes express the idea that the participant physically does something or takes actions, which are usually concrete actions. In this process, the participant who does something is the *actor*, and the *goal* is the participant to which the process is directed.
Example: Johnny   threw   his bag.

Participant: Actor	Process: Material	Participant: Goal

2.   Mental Processes

Mental processes are the processes that contain the meaning of thinking, feeling, and perceiving, such as understand, like, hurt, etc. In this process, the participant roles are *senser* and *phenomenon*. The *senser* is a conscious being that can think or see consciously. In contrast, the *phenomenon* is the one that is sensed.

Example: Mark   likes   watermelon.

Participant:	Process:	Participant:
Senser	*Mental*	*Phenomenon*

3.   Behavioral Processes

Behavioral processes are processes of physiological and psychological. This process is related to physiological and psychological behavior, such as breathe, smile, watch, laugh, etc. Halliday describes this process as a midway between material and mental processes (Eggins, 2004, p. 233). The participant in behavioural processes, which is called *behaver,* is a conscious being that is conscious can feel, think, or see. Yet, it is different with mental processes since *behaver* is in action, not sensing. In this process, mostly there is only one participant who is *behaver*. However, sometimes in a clause, there is a *range* that specifies the scope of the process.

Example: He   snores   loudly.

Participant:	Process:	Circumstance
Behaver	*Behavioural*	

She   took   a nap.

Behaver	*Behavioural*	*Range*

4.   Verbal Processes

Verbal processes are processes of verbal action or saying, or symbolically signaling. In verbal processes, there is the participant that must appear in every verbal process, which is the *speaker*, and three participants that may or not appear in the clause, which are *receiver*, *target*, and *verbiage*. *Sayer* is the participant that has the responsibility to do the verbal process, so that is why this participant has to appear in every verbal process. *Sayer* has to be able to put out a signal, yet it does not have to be a conscious being. *Receiver* is the one to whom the verbalization is addressed. While *target* is the one acted upon verbally (insulted, complimented, etc.). The last is verbiage, which is a name for the verbalization itself.

Example:

She   said   that   she   likes   him.

Sayer	*Verbal*		*Senser*	*Mental*	*Phenomenon*

Johnny   told   Ten   a lame joke.

Sayer	*Verbal*	*Receiver*	*Verbiage*

Keating   slurred   Howard.

Sayer	*Verbal*	*Target*

5.   Relational Processes

      This process involves states of being and having. Eggins (2004) mentioned relational processes are where things are stated to exist in relation with other things (p. 237). The processes which establish identity are Identifying Processes, while processes that assign a quality are Attributive Processes. Each process has its own participant role. In attributive, the participants are carrier and attribute, while the participants of identifying processes are token and value.

      Attributive and identifying processes has slightly different processes or verb. Sometimes it is quite difficult to determine whether the process is included in attributive or identifying process. Yet, there is a difference that may make it easier to identify both of the processes. Attributive processes are not able to be made passive while identifying processes are able to. If attributive processes are made passive, the clauses will not make sense.

Example: Mark   is   very skinny.

Carrier	*Attributive*	*Attribute*

Mark   is   the skinniest one here.

Token	*Identifying*	*Value*

6.   Existential Processes

      Existential processes are the processes of existence. It simply stated that something exists. This process is expressed by verbs of existing which are 'be', 'exist', 'arise'. The only participant in existential processes is called *existent*.

      Example: There   is   a mole   on your face.

Existential	*Existent*	Circumstance

7.   Meteorological Processes

      Meteorological processes are the processes that are related to the meteorological condition.

      Example: It   is five o'clock.

             It   is hot.

Meteorological

Previous Studies

There are some other studies that analyzed transitivity processes. One of the studies was conducted by Apendi and Mulyani (2020), which studied the transitivity process of descriptive texts written by students. in this study, they discovered some processes applied in the texts, and the most dominant processes were material and relational processes. Furthermore, there is a study that analyzed the processes as one of the language features of explanation texts using a transitivity system and also the schematic structure applied in the texts (Gintings, 2015). The finding showed that the schematic structure applied had fulfilled the criteria of explanation text, and the most dominant processes were relational, material, and mental.

The other study was conducted by Elsie et al. (2020) that examines not only the process and the dominant process type applied but also the circumstantial elements and the mistakes and errors experienced by the students. The finding showed there were six processes applied, and the material process was the most dominant process. In comparison, the location was the circumstantial element that was dominantly applied. For the mistakes and errors, the students made many mistakes and errors related to the uses of past tense, article, spellings, modal auxiliary, capital letter, plurality, and preposition in a clause.

From the three previous related studies, all of the studies focused on the transitivity system for the analysis. However, each of the study has different genres that were analysed and also the other aspects that make the study different. Considering the similarities and differences among the three previous studies, this study analyzed explanation texts that eleventh grade students write at one of vocational high schools in Klaten using transitivity system. From the transitivity system, the researcher discovered the processes used in the texts and also the dominant process used by students. Besides, this study also analyzes how the language features and schematic structure are applied by students.

RESEARCH METHOD

This study employed a qualitative study. Qualitative study is an approach that explores a social problem of certain individuals or groups (Creswell & Creswell, 2018, p. 41). It focuses more on understanding concepts or experiences in depth. In this study, the researcher analyzed the texts using a transitivity system revealing the processes applied. Furthermore, this study applied case study design. It is an approach that explores a bounded system through detailed and in-depth data colection involving variety of data collection procedures (Creswell & Creswell, 2018, p. 51). Since this study focused on analysing how eleventh grade students write explanation text using the language features and schematic structure in small cases, case study design is appropriate.

Moreover, the technique of collecting the data applied in this study was documentation. The data was the explanation texts written by eleventh-grade students at one of vocational high schools in Klaten. The data was included in the documentation since it was taken from the English teacher's documentation of a remedial test. The instruments used in this study were checklists, schematic structure and transitivity

checklist. The schematic structure checklist was used to select the data based on the schematic structure suggested by Gerot and Wignell (1994).

While the transitivity checklist was used to discover whether or not transitivity was applied in the texts, in this study, there were 12 texts taken from the English teacher, but only ten texts were analyzed. This was due to the process of selecting the data using the schematic structure checklist. Among 12 explanation texts that were gathered, there were only ten texts that applied the schematic structure suggested by Gerot and Wignell (1994).

This study followed three steps of data analysis proposed by Miles, Huberman, and Saldana (2014). The first step was data condensation, which was part of the analysis. In this step, the data was analyzed by selecting, abstracting, and transforming the data. After the data was analyzed, it was organized and displayed in the form of a percentage, which was included in the data display step. The last step was drawing a conclusion. After the data was displayed in percentage, the dominant process applied in the texts could be concluded.

FINDINGS AND DISCUSSION

There were two categories in these results. The types of processes found in the text and the dominant process applied. The two categories were described as follows.

The Type of Processes

In all of the texts, there were only four processes that were applied. Those were material, mental, relational, and existential processes. For the total processes applied, the material process was the most frequent process, which appeared 81 times out of 137 clauses. The relational process appeared 40 times in total for the second most frequent process. While mental and existential processes only appeared 11 and 5 times, respectively.

Furthermore, material and relational processes could be found in all of the texts. While for mental processes, there were only six texts applied this process which is Text 1, 4, 6, 8, 9, 10. The existential process was the least process in the text, which was applied only in 4 texts, Text 1, 5, 9, and 10. Most of the text applied material process as the most frequent process. However, three texts applied relational process as the most frequent process. These texts were Text 5, 8, and 10. For Text 10, the relational process was the most frequent, but the second frequent processes were existential and mental. In comparison, the material appeared only one time in the text. Below are the findings of processes applied in the explanation texts.

Table 1. *The Findings of Processes Applied in the Explanation Texts*

No.	Types of Processes	Frequency of Occurrence	Percentage (%)
1.	Material Process	81	59.12%
2.	Relational Process	40	29.19%
3.	Mental Process	11	8.02%
4.	Existential Process	5	3.65%

Material Processes

Material process was the most frequent process found, which appeared 81 times in the texts, and took 59.12 % of appearance. This process expressed the meaning of doing actions. It fits the function of explanation text, which explains how a phenomenon happens or works. The examples of the material process can be seen below:

Example:

1)

Honey	is made	by bee.
Goal	Material	Actor

2)

Bee	take	nectar	from flower
Actor	Material	Goal	Circ

From those two examples, the verb in example 1 is *made,* and the verb in example 2 is *take.* This is because those verbs are *material* which mean doing an action. In addition, the action here could be seen physically. Therefore the examples number 1 and 2 have the meaning of doing some actions and are included in material processes.

Relational Processes

Relational process was found in 40 clauses with a percentage of 29.29 %. As mentioned before, relational processes are divided into two, attributive and identifying processes. From the analysis, the attributive process appeared 26 times, and the identifying process appeared 14 times. The examples of relational processes can be seen below:

Example:

1)

Bali	has	beautiful environment.
Carrier	Relational:Att	Attribute

2)

Earthquake	is	one of the most destroying natural disasters.
Token	Relational:Id	Value

3)

Landslide	is caused	by two factors	namely driving factors and triggering factors
Token	Relational:Id	Value	Circ

The first and second examples were clearly about the meaning of being and having. The first sentence, "Bali has beautiful environment", explained the meaning of having, which was expressed literally by the verb 'has'. The second sentence expressed the meaning of being since it explained that 'the thing becomes something', and it expressed the identity of the thing. While the last example, "landslide is caused by two factors...", expressed that 'landslide' had relation with the 'two factors' which was cause and effect relation.

Mental Processes

Mental processes were found in 11 clauses in the texts analyzed which took only 8.02 %. This process explained the feeling and cognition about something. It was found only in 6 out of 10 texts analyzed. This process did not mainly apply because explanation texts' function is to explain the process of a phenomenon. While mental processes only showed the actions of sensing that happened mentally. Therefore, mental processes were used only to show the feeling or cognition of something when needed. The examples of mental processes can be seen below:

Example:

1)

A food	love(d)	by many people.
Phenomenon	Mental	Senser

2)

(do)	you	know...
	Senser	Mental

"A food loved by many people" had the meaning that the senser had a feeling toward something. While the second example showed, the senser had a cognition about something. Both of these meanings were related to sensing which happened mentally.

Existential Processes

This process was the least found in all of the texts. It only appeared in 5 clauses in 4 texts with a percentage of 3.65 %. In the explanation texts, this process became the complement that explained something existed. The verbs in existential processes were expressed by 'be', 'exist', and 'arise'. Yet, all of the clauses found in the texts only used 'be' as the verb. The examples of the existential process can be seen below:

Example:

1)

Inside the fruit	there	is	a cacao bean.
Circ		Existential	Existent

2)

There	are	lot(s) of local and foreign tourist	there.
	Existential	Existent	Circ

Both the examples had the word 'there' that functioned as the subject in the sentences. In the first sentence, the word there could be omitted and became "inside the fruit is a cacao bean", which also meant that a cacao bean exists inside the fruit. While the second sentence, there were two 'there' which had a different functions. The first 'there' functioned as the subject, and the second 'there' functioned as the circumstance. This sentence also showed the existence of something that meant it exists.

The Dominant Type of Processes

From the findings of frequency type of processes applied in the text, the researcher found material processes appeared 81 times with a percentage of 59.12 %, relational processes appeared 40 times with a percentage of 29.19 %, mental processes appeared 11 times with a percentage of 8.02 %, and existential processes appeared five times with a percentage of 3.65 %. This finding is described in the graph below.
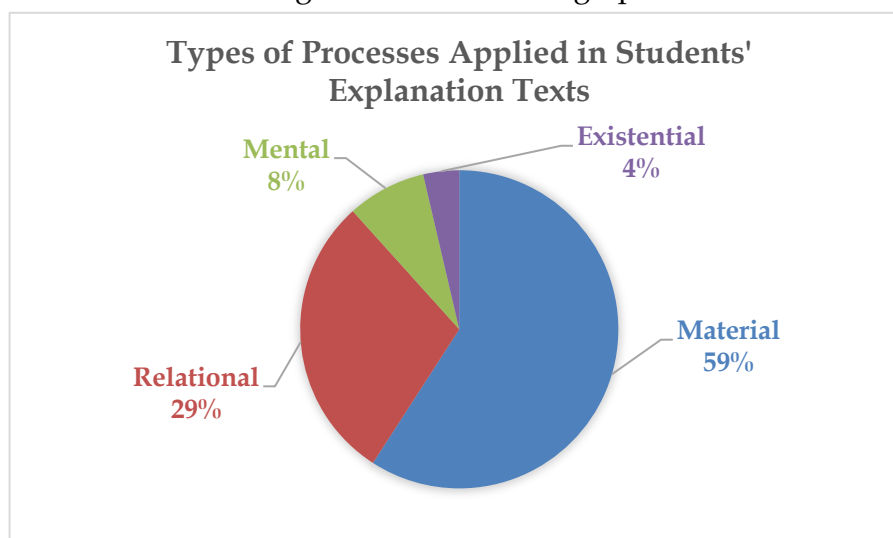

Figure 1. *Types of Processes Applied in Students Explanation Texts*

It can be seen from the graph that the material process was the most dominant process with more than half a percent of appearance in the texts. The second dominant process was relational processes which took thirty percent of appearance. From the frequency of appearance, the relational process had half of the material process appearance. While for mental and existential processes, both only took seven and four percent of appearance, respectively. These processes had a big gap with mental and relational processes, which dominantly appeared in the texts.

Material processes were found in all texts, which appeared in 81 clauses out of 137 clauses. It was the most type of process found in the texts. This process took 59.12 percent of the total processes found. It meant material processes were the dominant processes applied by students in their texts. This process was dominantly applied because most clauses had the meaning of doing some actions which explained how something is made or happens. It meant that students had been aware of how explanation text should be written based on the meaning and function, which is to explain the processes of natural or sociocultural phenomena.

It could also be found in all of the text for relational processes, but the number of appearances was not as many as material processes. This process appeared in 40 clauses with a percentage of 29.19 %. This made relational processes the second dominant process applied. This process became the second dominant process applied since it was needed only to express the identity and quality of something that would be explained in the explanation text. Therefore, this process was needed to explain the condition of the topic before it was going to be explained about how it occurs using material processes.

While mental processes only appeared in 11 clauses with a 8.02 %. This process could be found in Texts 1, 4, 6, 8, 9, and 10. Furthermore, the least process applied in the texts was existential processes. This process appeared in 5 clauses in 4 texts. It was applied in Text 1, 5, 9, and 10 with 3.65 %. For the other processes, such as behavioral, verbal, and meteorological, the researcher did not find these processes in the texts. Both mental and existential processes had the function of complementing the text. That was because explanation text is mainly about explaining how certain phenomena appeared, which was expressed mainly using material processes. While mental and existential processes only explained the affective and cognitive aspects and how something existed. Due to this reason, mental and existential processes only appeared a few times.

CONCLUSION

The finding showed four processes applied in the explanation texts, which are material, relational, mental, and existential. The most dominant process applied in the texts was the material process which appeared 81 times (59.12%). It was dominantly applied since it fit the function of explanation texts that explained how a phenomenon happened or worked.

Furthermore, the first and second dominant processes applied in the texts were material and relational. This finding led the researchers to conclude that the students had been aware of how the explanation text should be written based on the meaning and function, which explained how a phenomenon happened.

Thus, the results of this study could be used by teachers and students positively. For example, the teachers can make teaching materials and learning media related to explanation text simply by referring to the findings in this study especialy in expressing the meaning in clauses or sentences through verbs/processes. In contrast, the students may learn that the meaning of sentences in explanation text is very important and it affects the purpose or function of the texts.

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