

## The Realisation of Nominalisations in Students' Texts

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### Abstract

The present study portrays the realisation of nominalisations in undergraduate students' written texts. Nominalisation, as one of grammatical metaphors, is defined as the formation of nouns which derive from verbs or adjectives. It is asserted as one of the essential features of academic writing (Hyland, 2004) which even dominates the language of science (Halliday & Martin, 2005). Based on these statements, a research question arises, inquiring about the phenomena of applying nominalisations in students' texts. This qualitative study was carried out among Polytechnic students majoring in mechanical engineering. The data, resulted by conducting an essay test, are in the forms of texts. This test examined nominalisations applied in students' texts. To triangulate the data, an interview with some participants was also conducted. After the data were analysed by implementing the framework of nominalising metaphor, proposed by Halliday, three findings resulted. First, the students used 'default' nominalisations, the ones they usually found in their engineering textbooks. Second, nominalisation suffixes *-ment* and *-tion* mostly occurred in their texts. Third, in average, they realised four nominalisations in their written texts. The last finding is relevant with the result of a previous study of the same topic that the students' level of understanding nominalisations is moderate, not very high. This concludes that the students' ability to use nominalisations in written texts is still low. With their low ability, they could not realise nominalisations correctly. It recommends that for Polytechnic students, the ability of realising nominalisations be improved because nominalisations characterise the language of science.

**Keywords** Text, scientific language, grammatical metaphor, nominalisation

### INTRODUCTION

In educational process, language plays a very strategic role. Language is used for constructing meaning realised in the form of text. It is further said that written language experiences grammatical metaphors (Halliday, 1992). One of the grammatical metaphors that dominates the language of science is nominalisation. It is one of the characteristics of scientific English. It is also said as a grammatical feature of a particular type of writing, like essays and technical writing. Moreover, an essential part of scientific language is technical terms which may be derived through nominalisation that is turning happenings into things which can be technicalized (Halliday & Martin, 2005). It is obvious that nominalisation is essential for students studying engineering

There are many previous studies conducted to investigate the application of nominalisation in scientific writings. One of them is carried out by Banks (2005) who finds that nominalisation is widely recognised as an important feature of scientific writing. In addition, Holtz (2009) finds that there is a strong use of nominal style in scientific discourse and that nominalisation is the most distinctive feature of abstracts in information density. Furthermore, Yuliana's study (2011), conducted among nine research articles of three postgraduate students, reveals that there is a high level of nominalisation in written texts. On the other hand, Baratta's (2010) finding is an exception. In this case, he demonstrates that nominalisations do not play a prominent role within academic writing in 'Language, Literacy and Communication' (LLC) community, part of Humanities. He also states that there are a group of nominalisations used by 'default'. For example, nominalisations *opportunity* and *community* are more commonly used than their roots *opportune* and *commune*.

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Polytechnic students often make a lot of mistakes in producing English sentences. One of the mistakes is usually on the choice of appropriate words. The sentences commonly found in students' work are as follows. (Note: Asterisk \* is used for ungrammatical sentences)

1. *The machines are maintenance in the workshop regularly.* \*
2. *The long of the product is 20mm.* \*

Instead of saying:

1. *The machines are maintained in the workshop regularly.*
2. *The length of the product is 20mm.*

The students are not able to use nominalisation correctly. What the students experience becomes a problem in using language for academic purposes, because nominalisation is very important in academic language. The importance of nominalisation is mentioned by Halliday that grammatical metaphor that dominates the language of science is nominalisation (Halliday & Martin, 2005). Furthermore, Polytechnic students take it for granted for most nominalisations they meet. This is supported by Halliday & Martin's (2005) opinion, saying that the students could apply nominalisation because they had lexical items concerning their field of studies, in this case, engineering textbooks.

However, it is found that, in two previous studies of the same topic (Fatonah, 2013 & 2014), the students' understanding of nominalisations realised in academic text is moderate, that is 65%. It is only a little bit above the average level. Therefore, this paper is specially written to portray the realisation nominalisations in written texts produced by Polytechnic students, majoring in mechanical engineering. In addition, the strategic role of nominalisation in scientific language (Halliday & Martin, 2005) is another reason why the researcher possesses a strong motivation to investigate the realisation of nominalisations in students' texts.

There are three limitations of the study. First, the students' texts are only analysed using one device, that is Ideational metafunction. This metafunction is used to analyse the realisation of nominalisation in written texts. Therefore, the realisation of other grammatical features, like Passive Voice and tenses, are not analysed. Second, the texts to be studied are only the written language, but not the realisation of nominalisation in spoken language. Third, the text type written in the test is Procedure Text, in which the sentences are usually in the forms of imperatives, wherein nominalisation is not frequently needed. The text type should be Exposition or Argumentative Texts, wherein nominalisation is commonly found (Fatonah, 2013).

This article consists of five sections. The first section introduces the background, motivations, purposes, limitations, and organisation of the study. The related theories, grammatical metaphors and nominalisations, are briefly reviewed in the second one. The third elaborates the qualitative method employed, the essay test and interviews to get the data, and the use of the framework of nominalising metaphor to analyse them. The findings are presented and discussed in the next section before conclusions and suggestions are offered. The last section is the list of references cited in this study.

## LITERATURE REVIEW

This section provides a short overview of Systemic Functional Grammar (SFG) proposed by Michael Halliday (1994), in which language is viewed as a resource for making meanings. In language, meanings are realised through choices of given selections of content as wordings, which in turn get realised through spoken or written modes (Eggs, 2004). It is further said by Gerot & Wignell (1995:22) that:

The wordings of texts encode three strands of meaning: ideational, textual and interpersonal. Ideational meanings, meanings about things and ideas, are realised in the clause by options from TRANSITIVITY: Processes, Participants and Circumstances. Textual meanings, those which make language contextually and co-textually relevant, are realised in lexicogrammar through THEMATIC and information systems as well as through cohesion. And thirdly, there are meanings through which social relations are created and maintained. These interpersonal meanings are realised in the lexicogrammar through selections from the system of MOOD.

The realisation of the three meanings is illustrated in following sentences. First, ideational meanings. The examples of them are adopted from Ravelli (1999, p. 4):

1a) *The bomb exploded at Hiroshima.*

<b>Participant</b>	<b>Process</b>	<b>Circumstance</b>
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1b) *The explosion of the bomb at Hiroshima .....*

<b>Participant</b>
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Sentences 1a) and 1b) have similar meanings, but they have different structures. The former is a complete sentence, but the latter is not, as there is no Process. The Process in example 1a) becomes the Participant in example 1b). These examples are the realisation of grammatical metaphor, called nominalisation, which mostly occurs in scientific texts. It is defined as the formation of the noun which derives from other nouns (Hornby, 2010), like verbs or adjectives, for instance: *flexible* (adj.) - *flexibility* (n) (Halliday, 1992).

Second, textual meanings, in which the relation of language to its environment is expressed. The sentence is divided into Theme (including Continuation, Conjunction, and Topical) and Rheme. The example is taken from Gerot and Wignell (2005:106):

*Well, on the other hand, we could wait.*

<b>Continuation</b>	<b>Conjunction</b>	<b>Topical</b>	<b>Rheme</b>
<b>Theme</b>			

Third, interpersonal meanings, in which a speaker's attitude and judgement are expressed. The sentence is divided into Mood (Subject and Finite) and Residue (the remainder of each sentence). The example is taken from Gerot and Wignell (2005:25):

*That will never come off there.*

<b>Subject</b>	<b>Finite</b>	<b>Residue</b>
<b>Mood</b>		

Among the three meanings, only ideational meanings, which discuss about nominalisation, are realised in Transitivity system, including Participants, Processes and Circumstances. Since the focus of attention in this study is about nominalisation, this system is considered to be the appropriate tool for analysing the students' written texts.

### Grammatical Metaphor and Nominalisation

Grammatical metaphor is one of the characteristics of scientific English. By using grammatical metaphor, a text can be developed to highlight technicality (Halliday and Martin, 2005). Even, the term grammatical metaphor is also referred to making the same 'meaning' with different 'wordings' (Halliday, cited in Gerot & Wignell, 1995).

Initially, there are 13 types of grammatical metaphors. The four types of the metaphors are generally referred to as nominalisations or nominalising metaphors (Halliday, as cited by Chen and Foley in Ravelli and Ellis, 2004; & Droga & Humphrey, 2011), posted in Figure 1.

Types of Nom.	Semantic Shifts / Grammatical Shifts	Examples
<b>Type I metaphor</b>	from quality to entity/ from adjective to noun	<i>able</i> – <i>ability</i>
<b>Type II metaphor</b>	from process to entity /from verb to noun	<i>cut</i> – <i>cutting</i>
<b>Type III metaphor</b>	from circumstance to entity / from adverb /preposition. phrase to noun	<i>very fast</i> - <i>the speed</i>
<b>Type IV metaphor</b>	from relator to entity / from conjunction to noun	<i>so</i> – <i>the result</i>

**Figure 1** Types of Nominalisation

Figure 1 is briefly elaborated as follows. Type I is built by semantic shift from quality to entity or grammatical shift from adjective to noun, for example: *able* → *ability*. Type II is formed by semantic shift from process to entity or grammatical shift from verb to noun, for instance: *cut* → *cutting*. Type III is realised by semantic shift from circumstance to entity or grammatical shift from adverb / prepositional phrase to noun, like *very fast* → *the speed*. The last type is constructed by semantic shift from relator to entity or grammatical shift from conjunction to noun, like the word *so* → *the result* (Fatonah, 2013 & 2014).

The formation of nominalisation can be simply done, according to Knapp & Watkins (2005), by using present participle form of the verb, like *dancing*, *writing*; or by adding suffixes: *-ion*, *-ty*, *-ment*, as in the following examples: *dedication*, *reality*, *development*. The realisation of nominalisations in written texts causes three effects (Gerot & Wignell, 1995; Droga & Humphrey, 2011; Knapp & Watkins, 2005; Eggins, 2004; Hyland, 2004). The first effect is creating abstract and technical terms. The second is condensing the sentence. The last one is removing actors and time. All effects are illustrated in the following sentences:

- ✓ *When the clouds get heavy, these droplets fall to the ground.*
- ✓ *This is called precipitation.*
- *When the sun heats up the water, it evaporates into steam.*
- *Evaporation causes the steam to rise into the air.*
- ✓ *I discover similar findings during the research.*
- ✓ *The discovery of similar findings during the research .....*

However, it is found that, in two previous studies of the same topic among Polytechnic students (Fatonah, 2013 & 2014), their understanding of nominalisations realised in academic text is moderate, that is 65%. It means it is only a little bit above the average level. Therefore, this study is specially designed to investigate the application of nominalisations in written texts produced by Polytechnic students, whose study background is mechanical engineering.

## METHODOLOGY

This paper employed qualitative research, presenting the phenomena of realising nominalisations in written texts, produced by 20 Polytechnic students of year three. Its attention is particularly focused on what nominalisations are used in their writing. The investigation took place in a state-owned Polytechnic in Bandung, Indonesia, having Diploma III and IV Programs. This institution is regarded as the appropriate site to gain some data for three reasons. First, this Polytechnic's major is engineering, in which scientific or technical English is mostly used in its textbooks. Second, the familiarity with the site, as the researcher has been teaching technical English in this Polytechnic for years. Third, the opportunity to portray the realisation of using nominalisation in students' texts, as this topic has not been given in the class, because of the time constraint, that is the limited time to teach English in the class (Fatonah, 2013 & 2014), although it is stated that nominalisation is an essential feature of academic writing (Hyland, 2004).

## Data Collection

The main data in this study were collected by conducting an essay test. The procedure of conducting the written test is as follows. First, the students were prepared to do the test by inviting them to recall their memories when practising their skills in Mechanics Workshops or Mechatronics Laboratories. This is a brainstorming session before starting writing. Later, they were asked to select one of their own experiences which left an impression on them. It was hoped that they wrote more because they wrote on the topic they were familiar with (Freidlander, 1990, as cited in Hyland, 2004). Then, they were instructed to draft their experiences chronologically in their workshops or laboratories on draft papers. Afterwards, they were suggested to check the application of grammar and vocabularies in their texts. Later, they were given enough time to rewrite their own experiences neatly. Finally, they submitted their papers directly to the researcher. This was done in order to gain objectivity and validity of the test results (Fatonah, 2013).

For the sake of triangulating the data, another method of collecting data was used. It was done by interviewing some of the participants. These data were functioned to enhance the main data resulted from the written test. While discussing the main data, the interview data were occasionally inserted. It was conducted in this study in order to reach the validity and reliability of the data.

## Data Analyses

The data resulted by having an essay test were in the forms of texts. They were analysed by implementing the framework of grammatical metaphors, generally referred as nominalisation or nominalising metaphors proposed by Halliday (1998 in Ravelli & Ellis, 2004; Christie & Martin, 2000). In this case, the framework of analyses is the four types of nominalisation posted in Figure 1. The analyses of the data were carried out within the steps as follows. First, the texts, written by the students who followed the rules of describing a process of doing something, were chosen. They were 20 selected written texts. Then, the nominalisations realised in their texts were identified. After that, those nominalised words were classified by implementing the taxonomy of nominalising metaphors, as posted in Figure 1. Then, they were organised based on the kinds of suffixes used in their texts. Afterwards, their frequencies were converted into percentages. Finally, the data were interpreted referring to the results of the studies conducted by Baratta (2010), Ravelli (1999) and Yuliana (2011). The organised data are posted in Figure 6 in the next section.

## FINDINGS AND DISCUSSION

In this section, the presentation and the discussion of the data are related to the ones in the form of scores resulted from the previous studies of the same topic (Fatonah, 2013 & 2014). The previous studies found that the students' level of understanding nominalisation in scientific text is moderate, not very high. It is 65%. It means that Polytechnic students still have limited linguistic competence in understanding four of grammatical metaphors, in this case, nominalisations found in scientific texts. Based on the discussion of the current data, this present study reveals three findings. First, the students tend to realise 'default' nominalisations (Baratta 2010, p. 1034) in their texts. Second, two nominalisation suffixes, *-ment* and *-t/-sion* possess the highest occurrences in the students' texts. Third, in average, every participant realises four nominalisations in their written texts. Those findings are respectively elaborated as follows.

### Realisation of 'Default' Nominalisations

As the results of analysing the students' texts, it is revealed that they manifest nominalisations which are categorised as 'default' (Baratta, 2010, p. 1034). These kinds of nominalisation might have been acquired subconsciously since these might have been well known by the participants, and due to the frequently applied in their academic textbooks. These illustrations are taken from students' texts (Fatonah, 2013). This \* is used to mark ungrammatical sentence in Figure 2.

Nominalisations in Texts (underlined words)
<i>There are some <u>equipments</u> that we need.</i>
<i>*To operate the oscilloscope is simple and <u>safety</u> if we follow the right step.</i>

**Figure 2** Nominalisation in Students' Texts

In Figure 2, in the first sentence, this student realises nominalisation *equipments* correctly because this word is often used in their textbooks. In another sentence of the same text, unfortunately, nominalisation *safety* is incorrectly realised. The correct word needed is *safe*. This is the evidence which shows that although they have acknowledged derivated words, they still need to learn how to realise nominalisations correctly. This phenomenon is supported by Derewianka (1998), that students still need assistance how to 'unpack' the nominalisation. Based on this finding, two selected students' texts are analysed, representing relatively low and high achievers. They are Participants #2 and #5. The following text to be analysed is written by Participant #2 (Fatonah, 2013:60).

**Using Multimeter**

*Multimeter is electrical equipment for measure voltage, current or resistant. Sometime, some people doesn't know how to use multimeter. In this I want to describe how to use multimeter. First put the red probe to positive polar and the black probe to negative polar. Next change selector to dc position for measure dc voltage, ac position for measure ac voltage, current position to measure current or ohm position to measure resistant. After that calibrate the multimeter to check zero position. Finally measure the object that we want. The result of measurement will show in the screen in multimeter*  
 (This text is written by P#2)

**Figure 3** Student's Text

This student's text still shows many ungrammatical sentences, but they are not discussed altogether. In this opportunity, the focus of the discussion is only on the use of nominalisation. This text indicates two nominalisations (underlined), *equipment* and *measurement*, that are successfully realised by P#2. Actually, he could have realised more than two nominalisations in his written text, as it is possible for him to do this. This student is regarded not aware of the need to realise more nominalisation. In this study, this phenomenon may occur because of the limited linguistic competence of this participant.

By analysing this text further, it is revealed that instead of saying *In this I want to describe how to use multimeter* (in Figure 3, sentence #3), this participant should have said *This is the description of using multimeter*. In this text, nominalisation *description* is used, that is by omitting the agent 'I'. This idea is also elaborated by Schleppegrell (1997:51, in Baratta, 2010) that "the expression of grammatical agency can be avoided by several means in English, including through passivisation and nominalisation".

This is in line with the opinions of Droga & Humphrey (2011) and Knapp & Watkins (2005) that one of the effects of realising nominalisation is the effect of removing actors. Furthermore, this phenomenon is consistent with Baratta's (2010) study that the increase of nominalisation use might be connected to the directive to avoid using the first person, which could, in turn, lead to a higher frequency of nominalisations. In short, using nominalisation does not only produce sentence without an agent, but also condensed sentence (Hyland, 2004; Eggins, 2004).

The focus of the next discussion is on analysing other participant's text (P#5). This participant realises seven nominalisations *equipment*, *operation (4x)*, *beginning*, and *conclusion*. He does not manifest more nominalisations. It is as if more nominalisation were not needed in this text. Instead, in this *Procedure Text*, he writes more imperative sentences than affirmative sentences.

**Flexible Manufacturing System Processing Unit**

*Purpose: to make a hole in the workpieces with drilling process and checki process.*

*Equipments: FMS processing unit, compressor, PC, hose*

*Step: First, turn on the compressor to supply the air service unit. Then, in the input panel, turn the power switch on. Press the start button to star the operation/process (Rotary indexing table will be rotate to bring the workpiece). After that the workpiece will be drilled and checked. If we want to stop the operation, the stop button must be pressed. And if we want to the operation from the beginning, press the reset button, then press the start button again. Press the Emergency stop button to terminate the all operation. (Note: the PC must be programmed first in the PC).*

*Conclusion: to make a hole in the workpieces need some process there is drilling and checking process. We must obey the step in order to prevent the accident.*

(This text is taken from P #5)

**Figure 4** Student's Text

In this text, there are still many ungrammatical sentences, but the focus of the attention is only on the realisation of nominalisation. In analysing this text, the theoretical review posted in the previous section is used. According to Droga & Humphrey (2011) and Knapp & Watkins (2005), one of the effects of realising nominalisation is the effect of removing actors. It is written in clause #5 *And if we want the operation from beginning, press the reset button*. It should have been written without the agent 'we'. *The beginning of the operation can be set by pressing the reset button*. In line with this analysis, Baratta (2010) assumed that academic writing, in general, favours an impersonal tone. In this case, the deletion of agent allows for more objectivity. So, this sentence does not need the subject or the agent 'we'.

This situation was supported by some interviewees when giving their opinions. They said they often improved derivated words in their academic activities in Polytechnic without being aware whether these words were derivative or not, without having opportunity to learn to unpack them, for instances given by some students when they were interviewed: *filing, ability, and maintenance*; and without being acknowledged that those words could be shifted into *file, able, and maintain*. Because of these realities, it was easy for them to make mistakes when practising or unpacking those nominalisations, particularly in presenting scientific topics.

### Application of Suffixes in Students' Texts

The nominalisations applied in students' texts were classified based on the kinds of nominalisation suffixes in Figure 6. Their percentages are also recapitulated in the same Figure. The total of nominalisations realised by 20 students is 89 words (Fatonah, 2013).

Nom. Suffixes	Some Examples	F	%
- ment	measurement, equipment	39	44
- t/sion	calibration, instruction,	29	33
- ance	resistance,	5	5
- ing	controlling, soldering,	1	1
- cy	frequency	7	8
- ian	technician	1	1
- ure /-a	procedure, terminal,	6	7
/-ity /- th	ability, length		
speed	speed	1	1
<b>TOTAL</b>		<b>89</b>	<b>100</b>

**Figure 5** Nominalisation Suffixes (as Test Results)

Figure 5 shows the nominalisation suffixes *-ment* and *-t/-sion* like in: *adjustment* and *calibration* which mostly appear in students' texts. Their frequencies are of 39 and 29, which are equal to the percentages of 44 and 33 respectively.

Referring to the data posted in Figure 5, it is obvious that suffix *-ment* obtains the highest rate of 44%, the same as 39 out of 89 nominalisations. It is indicated as the most frequently applied suffix by the participants in their texts. This suffix is found in nominalisations *equipment*, *measurement*, and *adjustment*, as respectively illustrated in Figure 6, written by students #1, #2 and #11. Other suffixes *-t/-sion* gain the frequency rate of 29, the same as 33%. This is the second highest rate of the nominalisation suffixes occurred in students' texts, for examples *calibration*, *instruction* and *connection*, written by students #11, #13, and #8, attached completely in Figure 6.

The suffix *-ing* is used in nominalisation *beginning*. This kind of suffix is used correctly in this test with the frequency of occurrence 1. It equals 1%. This nominalised word is written by student # 5. Another kind of nominalisation suffix *-ance*, occurring 4 times, the same as 5.9% of all nominalisations manifested in the students' texts. Some of the examples are posted above. While other suffixes *-ure*, *-al*, *-ity*, and *-th* obtain the same number of occurrence in students' texts, that is twice for each, the same as 2.9%. Those suffixes are applied in the nominalised words *procedure*, *terminal*, *ability* and *length*. There is other nominalisation with zero suffix, like *speed*, as illustrated in Figure 5. Another nominalisation suffix with the lowest rate of frequency is *-ian*, like in nominalisation *technician* (#16). The data written in Figure 5 are indicated in more detail in Figure 6 (Fatonah, 2013).

Ps' No	Nominalisations in Texts ( underlined)
#1	If the <u>equipment</u> is in good condition, you can operate it.
#2	The result of <u>measurement</u> will be shown in the screen.
# 11	Then, set <u>adjustment</u> and look on the display.
#11	Next, set a selector to resistance measurement for multimeter <u>calibration</u> .
#13	Transfer can be done by using the written <u>instruction</u> in the software.
#8	After that, click "new <u>connection</u> ".
#5	And if we want the <u>operation</u> from the <u>beginning</u> ,.....
#11	Multimeter is used for measuring voltage, current and <u>resistance</u> .
#14	We want to use voltage, current, and <u>resistance</u> .
#7	By this <u>procedure</u> , the oscilloscope can be operated.
#8	Then, open the Hyper <u>Terminal</u> .
#17	It used to know <u>ability</u> to input your data.
#14	We need to prepare a 9-wired cable with 2 meters in <u>length</u> .
#2	The <u>result</u> of measurement will be shown in the screen.
#10	The material we want to drill will decide motor <u>speed</u> and cutter type we will use.
#16	When mechanical <u>technician</u> wants to repair a machine, he has a lot of tools to help.

**Figure 6** List of Nominalisations in Students' Texts

Based on the data presented in this section, it is clearly acknowledged that most of the students were able to realise the nominalisation suffixes *-ment* and *-t/-sion* in their texts correctly. These achievements are due to two conditions. The first one is that these suffixes are often found in students' scientific texts or textbooks, so that they are very familiar to the students. This reality is supported by the data resulted from the interview session. Some students argued that the two kinds of suffixes, *-ment* and *-t/-sion*, were relatively easy to indicate and to recall. The second one is that in the application of these suffixes, the grammatical shift from verb to noun, was easy to understand. Consequently, the words using these suffixes, e.g. *calibration* and *equipment*, were applied in their written texts correctly. These phenomena are in line with



the fact found in Ravelli's (1999) study that the two suffixes, *-ment*, and *-s/-tion*, are also positioned in the first two on the list of suffixes used in the texts which indicate metaphorical forms. This situation implies that the more often these suffixes are found, the more easily they are understood and applied in their own texts. (Fatonah, 2013).

### **Number of Nominalisations in Students' Texts**

The number of nominalisations realised by students is indicated by the written test results. It is demonstrated there are 89 nominalisations realised in 20 students' texts. In average, every participant practices about four nominalisations in their own texts of about 200 words. Some participants even wrote only two nominalisations. Some others realise about five to seven nominalisations. Based on these realities, it is interpreted that the participants possess relatively low capacity in realising nominalisations, since compared with a scientific text of about 200 words written by Dieter (1991), there are 22 nominalisations.

## **CONCLUSIONS AND RECOMMENDATIONS**

Primarily, this paper investigates the realisation of nominalisations in students' written texts. In this study, the texts are analysed by employing the framework of nominalising metaphors. It has been indicated by some findings: that the students used 'default' nominalisations in their texts, that the nominalisation suffixes mostly used were *-ment* and *-s/-tion*, and that in average, they were able to realise four nominalisations in their texts. Then, it concludes that, in average, students' ability to apply nominalisations in written texts is still low. This is evidenced by their ability to realise nominalisation in their texts. This is also supported by the result of the previous studies of the same topic (Fatonah, 2013 & 2014), that their understanding of nominalisation used in scientific text is relatively moderate (65%). Their moderate understanding of nominalisations is not high enough for the students to realise nominalisations in their texts correctly.

There are many reasons for students not to realise more nominalisations in their texts. First, nominalisation is not taught to students, due to the time constraint, that English is taught within only two credit semester units. They have difficulty in applying nominalisation correctly. This is supported by Halliday and Martin's (2005) opinion that scientific writing became difficult in certain ways. The difficulty lies more with the grammar than with the vocabulary. They further give the reason that vocabulary is much more obvious and easier to talk about than grammar. Second, students are not aware of the need of realising nominalisation in their texts. They even do not know that nominalisation is the characteristic of a scientific text and that nominalisation dominates the scientific language. These are acknowledged by some students when interviewed.

Due to the important role of nominalisation in scientific language, it recommends that the students' ability in applying nominalisation in written texts be increased. It can be reached by improving students' understanding of grammatical metaphors that are usually found in scientific language, especially with the understanding of nominalisation.

This study has a lot of strength that can be contributed to the further research. It might advance educational practice by incorporating nominalisations into the teaching academic writing. It might not only improve the teachers' awareness of the prominent roles of nominalisation in academic texts, but also the teachers' help to teach to use nominalisations correctly. Moreover, this study might give other opportunities for other researchers to investigate the realisation of nominalisations in other fields of study background.

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