Employing Online Paraphrasing Tools to Overcome Students' Difficulties in Paraphrasing

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Abstract

This study aimed to investigate the mechanical engineering vocational education students' difficulties in making paraphrasing in academic writing course and to investigate the use of the online paraphrasing tools in overcoming those difficulties. The data were taken from two questionnaires distributed to the students regarding the two problems mentioned previously. The items were adapted from Paraphrasing Strategy theory by Schuemann (2006), and Kirszner (2008) which consists of four strategies: 1) changing its synonym; 2) changing part of speech; 3) changing the sentence pattern from active to passive; 4) keep using keywords from the original text. The study revealed that the most commonly used strategy was to change the synonyms with a percentage of 69%. Then, the most difficult problems in terms of content, structure, language, and paraphrase strategy are paraphrasing itself, using punctuation, identifying the part of speech, and inability to state the same information as the source text. Further research is needed in which a more significant number of participants and various academic writing difficulties should take part in, and a variety of research instruments should be employed.

Keywords: Paraphrase, Paraphrasing Difficulties, Paraphrasing Strategies, Online Paraphrasing Tools.

INTRODUCTION

Recently, the study of academic writing has become an important aspect of writing skills as writing skill is known as the most difficult skill in academic writing. Rahmatunisa (2014) investigated the Indonesian EFL learners' problems in writing an argumentative essay and revealed that the EFL students had problems in terms of linguistics, cognitive, and psychological. Ariyanti & Fitriana (2017) reported that Indonesian EFL university students had trouble in dealing with grammar, cohesion, coherence, paragraph organization, diction, and spelling errors in essay writing. Additionally, Kristy (2015) found that the third-semester students of the English Department of FKIP at University of Bengkulu have some difficulties in writing, which could be classified into Physiology Aspect (Content), Linguistics Aspect (Language use and Vocabulary), and Cognitive Aspect (Organization and Mechanics). Those studies lead us to the problems of how to write academic writing correctly with the proper grammar, cohesion, coherence, paragraph organization, and diction.

The problems of academic writing start with the most challenging part of academic writing itself: paraphrasing, which becomes difficulties to many students. Sarair et al., (2019) found that the students still failed to properly paraphrase the English texts as they observed that the students' works nearly copied most

of the sources. Most paraphrases were classified to be near copy since many students still copied the original texts more than 50%. Then, Irena and Yanu (201) revealed that not all of the students know the correct way to paraphrase so they can be labeled as a plagiarist. Janpha Thadphoothon (2019) analyzed the students' responses to the questions concerning their perceptions of paraphrasing skills. Results showed that students found paraphrasing skills to be essential for their language learning and development. They recognized that paraphrasing skills were complex involving a myriad of skills and abilities. They also perceived syntactic and lexical (vocabulary) skills to be essential for their ability to paraphrase. Many of them said that they could not decode the text and they did not know which words to use.

The students are mostly relying on the synonym and failed to paraphrase. It can be caused by weak writing competencies in their educational studies (Hyytinen et al., 2014). It is also because of the mismatch between participants' behaviors and perceptions. Ming-Tzu Liao and Chiung-Ying Tseng (2010) found that the participants tended to deny having committed plagiarism and claimed they were aware of the importance of paraphrasing. However, such belief has contrasted sharply with their actual behaviors in the paraphrasing task in which both postgraduates and undergraduates failed to produce acceptable texts. The reasons for this included not having explicitly learned paraphrasing, unsuccessful transfer of paraphrasing knowledge to writing due to a lack of experience and practice, and the influence of their citation practice in Chinese writing. Ibtisam (2015) suggested that the main factor of paraphrasing problems is the lack of previous experience and knowledge about the conventions of academic writing and the expectations of the institution they are studying at.

As paraphrasing skill causes some obstacles, some researchers try to solve them with technological sophistication. M. Chen et al. (2014) found that EFL learners have difficulty in making paraphrases to meet their writing demands, and there has been little research on developing automatic reference tools to assist the learners' paraphrasing skills for better writing quality. They develop PREFER, an online corpus-based assistance system. The results of the study indicated that PREFER offered the most benefits to students' writing performance (with an after-use improvement of 38.2%), compared with an online dictionary and an online thesaurus (−31.6% and −6.2%, respectively). Further investigation revealed that the less proficient, more motivated, and more conservative the students were, the more significant progress in the paraphrasing task with the help of PREFER would be. In the meantime, nearly 90% of the students expressed satisfaction with the paraphrases generated by PREFER, and its functions, and another 75% of them acknowledged that PREFER benefits their writing task. Prodromos Malaksiotis (2009) in his study focuses on paraphrase recognition and proposed three methods that employed string similarity measures, which were applied to several abstractions of a pair of input phrases (e.g., the phrases themselves, their stems, POS tags). The scores returned by the similarity measures were used as features in a Maximum Entropy (ME) classifier (Jaynes, 1957; Good, 1963) which learned to separate true paraphrase pairs from false ones. Two of his methods also exploited WordNet to detect synonyms, and one of them used additional features to measure similarities of grammatical relations obtained by a dependency parser.

The previous research has never discussed the difficulties in paraphrasing faced by Mechanical Engineering Vocational students, who might not have sufficient English knowledge and competence. Clara Aurora (2008) in her thesis stated that English mastery is required to enable the graduates to communicate in English when they face the working world and globalization era. Machine manuals and textbooks are usually written in English; therefore, it is important for mechanical engineering students in all degrees to learn English especially reading skill to enable them to read English textbooks and support their study (Clara, 2008).

Thus, this research will focus on investigating the effect of using internet-based paraphrasing tools or usually called as software assistants to help the Mechanical Engineering Vocational Education students write a better text. This study demonstrated that students can use online paraphrasing tools or article spinners in ways to avoid detection by originality checking software such as Turnitin®. Kirtland et al. (2012) in their study said that the use of web-based tools can be the excellent source for teaching writing skills in an interactive way. The free tools available via the internet lack constant updates and improvements as the code is controlled by webmasters and not by experts in MT (Carter & Inkpen, 2012). This study also investigated the roles of online paraphrasing tools to overcome the students' difficulties.

RESEARCH METHOD

With a qualitative-descriptive method, this study obtained the data by using two questionnaires distributed to the second-semester mechanical engineering students taking Academic Writing subject at Universitas Negeri Jakarta. The questionnaires were distributed after the students did writing activity which was creating paraphrases of the literature review section of a journal article using online paraphrasing tools. The first questionnaire was the Preliminary Questionnaire to know if the students used the online paraphrasing tools or not. The students who used the online paraphrasing tools filled in the second Questionnaire which consisted of Part 1 and Part 2. Part 1 which was adapted from Xiao and Chen (2015) asked about the students' difficulties to paraphrase the essay while part 2 which was based on the theory of Paraphrasing Strategies by Schuemann et al. (2006), and Kirszner et al. (2008) asked about to what extent the online paraphrasing tools overcome the students' difficulties to paraphrase. Part I consisted of difficulties in content (1, 2, 3, 4, 8), difficulties in structure (10, 11, 6, 7, 5), and difficulties in language use (12, 13, 14, 15). Those indicators are constructed based on the tables of means and standard deviations of items on students' writing difficulties in content, structure, and language use in Gengseng Xiao & Xin Chen (2015)'s study. Meanwhile, part II consisted of 15 questions (16-30) asking about if the online paraphrasing tools could help the students paraphrase sentences similar to the paraphrase strategies from Schuemann et al. (2006) and Kirszner et al. (2008). The total number of questionnaire items was 29 using 1-5 Likert scale instrument. The questionnaire was in Bahasa Indonesia and was distributed to 27 students.

RESULTS AND DISCUSSION

A. Results

The results of the preliminary questionnaire showed that 60% of the students were using online paraphrasing tools to write academic writing. 40% of the students were not using the online paraphrasing tools, so they were not allowed to fill in Questionnaire 1. It was also revealed that the kinds of online paraphrasing tools that the students usually used were paraphrasing-tool.com (44%), quillbot.com (25%), prepotseo.com (13%), spinbot.com (12%), and the bride (6%). It showed that the students used the online paraphrasing tools to help them in writing the academic writing in their daily course activities.
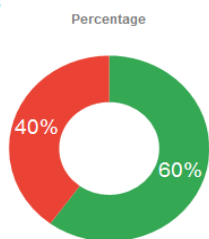
Image 1. Preliminary Question no. 1

Image 2. Preliminary Question no. 2

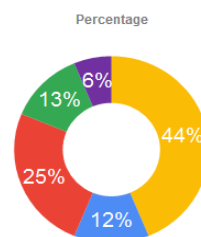*1. **What are the mechanical engineering vocational education students' difficulties when paraphrasing?***

To find out paraphrasing difficulties encountered by mechanical engineering vocational education students at Universitas Negeri Jakarta, a questionnaire has been distributed, collected, and analyzed with a percentage formula. The results of paraphrasing difficulties in terms of the content revealed that the students found it very difficult to do paraphrasing (2.81). They lack the ability to apply paraphrasing strategies such as changing the active sentence into passive voice (2.56). The students also thought it was difficult to decide the main idea (2.37), give supporting ideas (2.18), and formulate a sentence (2.31). See Table 1 below:

No	Items	Mean
	I find it difficult to:	

1	Paraphrase	2.81
2	Formulate a sentence	2.31
3	Decide the main idea in an essay	2.37
4	Give supporting ideas in an essay	2.18
5.	Change the active sentence into passive voice	2.56

Table 1. Means of items on students' academic writing difficulties in terms of content

No	Items I find it difficult to:	Mean
1	Use appropriate capitalization in an essay	2.68
2	Use proper punctuation in an essay	3.18
3	Find the synonym of words to change the source text into a paraphrase	2.25

Table 2. Means of items on students' academic writing difficulties in terms of structure

Table 2 above illustrates the difficulties in terms of structure. It can be seen that students' writing still needed improving. The most challenging one is using the proper punctuation, the mean of which was 3.18, followed by the use of appropriate capitalization in an essay (2.68), and finding a synonym (2.25). Meanwhile, table 3 below showed that engineering students who used online paraphrasing tools had great writing difficulties in terms of language use. The greatest writing difficulties was using part of speech in paraphrasing essay (2.56), followed by using connectors or discourse markers (2.43), using appropriate vocabulary to paraphrase an essay (2.31), using appropriate tenses (2.12), and use correct grammar (1.75).

No	Items	Mean
	I find it difficult to:	
1	Use the correct grammar in paraphrasing the essay	1.75
2	Use appropriate tenses in the essay	2.12
3	Use connectors such as firstly, however, therefore, moreover, etc. in paraphrasing essay	2.43
4	Use part of speech in paraphrasing essay	2.56
5.	Use appropriate vocabulary to paraphrase an essay	2.31

Table 3. Means of items on students' academic writing difficulties in terms of language use

No	Items	Mean
1	The paraphrase does not have the same meaning as the source text.	2.31
2	The sentences amount of the paraphrase does not equal the source text	2.62
3	The paraphrase does not state the same information as the source text	2.93
4	The paraphrase has many same sentences with the source text	2.25
5	The paraphrase does not have the same sentences structure as the source text	2.56
6	The paraphrase does not have any opinion	2.56

Table 4. Means of items on students' academic writing difficulties in terms of paraphrasing strategy

Table 4 above revealed that most students had difficulties in stating certain information in different words from the source text but shared the same meaning (2.93). The students also found that students' paraphrasing in amounts of the sentences was not equal with the source text (2.62), did not have the same sentence structure as the source text and the paraphrase did not have any opinion (2.56), did not have the same meaning as the source text (2.31), or even was the same as the source text (2.25). Lastly, Table 5 presented the significant differences in the four aspects of writing difficulties that engineering students were likely to experience. Engineering students viewed the structure in paraphrasing as the most difficult (2.73). The next difficulties were the paraphrase strategy (2.53), the content (2.44), and the language use (2.23).

No	Dimension	Mean
1	Content	2.44
2	Structure	2.73
3	Language	2.23
4	Paraphrase Strategy	2.53

Table 5. Means of the four dimensions on students' academic writing difficulties

2. *How could online paraphrasing tools help students in dealing with those difficulties?*

To find out if online paraphrasing tools could help mechanical engineering students in dealing with paraphrasing difficulties, the questionnaires had been distributed, collected, and analyzed with a percentage formula. The results of the calculation are presented in the table below:

No	Items The use of paraphrasing tools could help me to:	Mean
1	Use grammatically correct	4.37
2	Change the part of the speech	4.12
3	Use proper tense	4.06
4	Use proper connectors/discourse markers	4.18
5.	Change words from the source text.	4.0
6.	Change the active sentence into passive voice and vice versa.	3.75
7.	Rewrite the source text into a paraphrase with different writing.	4.06
8.	Find synonym to paraphrase an essay	3.75
9.	Change the sentence structure of the source text.	3.25
10.	Cannot change the source text at all.	2.75

Table 6. Means of the role of paraphrasing tools in paraphrasing

As stated in Table 6 above, the greatest mean value of the role of online paraphrasing tools was to use correct grammar (4.37). Moreover, they think that online paraphrasing tools can help them to use the proper discourse markers (4.18), change the part of speech (4.12), use proper tense (4.06), rewrite the source text into a paraphrase with different writing (4.06), and change words from the source text (4.0). Furthermore, it can change the active sentence into passive voice and vice versa (3.75), find a synonym to paraphrase an essay (3.75), and change the sentence structure of the source text (3.25), but cannot change the source text at all (2.75).

As each item had been calculated into mean value, the researcher also calculated it into 2 dimensions for easier reading: paraphrasing and content, grammar, and language use, as presented in Table 7 below. It can be seen that the mean value of the roles of online paraphrasing tools in helping with content, grammar, and language use difficulties was higher with 4.18 points than that of paraphrasing difficulties with 3.59 points.

No	Dimensions	Mean
1	Content, Grammar, Language Use	4.18
2	Paraphrasing	3.59

Table 7. Means of the dimensions on the role of online paraphrasing tools in paraphrasing

B. Discussion

Out of 27 engineering students in the class, only 16 students used online paraphrasing tools to paraphrase sentences from the original source to their own essay. Four such aspects as content, structure, language use, and paraphrasing strategy became main inquired information from respondents through questionnaires. In terms of content, students found paraphrasing as the most challenging aspect in academic writing with mean score of 2.81, while in fact paraphrasing becomes one of the most used strategy in developing well-informed and convicting content in academic writing. To overcome the paraphrasing difficulty, teachers need to utilize Content-Based Instruction to make the links between writing skills and learners' disciplines tangible and that

pre-degree preparation needs to include extensive writing practice which would help students become familiar with academic writing demands.

In terms of structure, the students got most difficulties when using punctuation correctly, with mean score of 3.18. Punctuation marks provide words with meaning, and they can change the meaning of words if they are not used correctly; thus, students need to practice producing well-structured sentences so that the sentences or utterances can be delivered well and easily understood by the readers.

In terms of language use, the students found it most difficult to identify the types of part of speech with mean score of 2.56 because of lack of lexical knowledge. Students need to get used to reading, not only some research articles but also other types of texts to make them aware of the functions of part of speech. More guidance and practice can also be implemented in the class. Moreover, students should be encouraged to use new words, expressions, and sentence patterns that they have acquired, thus, promoting their vocabulary acquisition and linguistic competence. Vocabulary acquisition is a long and complex process, and only through considerable language intake and usage can engineering students eliminate the language barriers to successful English writing. In this process, paraphrasing tools take part. When they meet unfamiliar words, lectures should allow them to open the tools to check the synonym of it and find the part of speech.

The last is the difficulties in applying paraphrasing strategy, in which the hardest part is when they were required to not state the same information with the source text, with mean score of 2.93. Here, the students can use paraphrasing generator or paraphrasing tools. These tools can help students create paraphrases of certain words, phrases, clauses, or sentences.

Teaching paraphrasing skills to students is not an easy task, not only for the students but also the teachers. It is another level of challenge, more than just the knowledge of grammar, vocabulary, or even writing. For that reason, they should adopt and improve their teaching and learning strategies to remove the language barriers. Moreover, the engineering students' level of English comprehension is usually lower than other students', considering that they usually do more practical things than theoretical things. Therefore, paraphrasing generators or tools would be beneficial. Paraphrasing generator is an important task in NLP (Natural Language Processing), which can be a key technology in many applications such as retrieval-based question answering, semantic parsing, query reformulation in web search, data augmentation for a dialogue system. However, due to the complexity of natural language, automatically generating accurate and diverse paraphrases is still very challenging.

Despite the above challenge of paraphrasing tool use, the results also revealed that online paraphrasing tools could help students in dealing with those difficulties in terms of grammar, structure, vocabulary, and paraphrasing strategy. They used various online paraphrasing tools such as *paraphrasing-tool.com, quillbot.com, prepotseo.com, spinbot.com,* and *the bride,* meaning that the students had already been familiar with this kind of tools, and they could choose one among many tools which they think easier and more convenient to use. The students can use online paraphrasing tools or article spinners in ways that avoid detection by originality checking software such as Turnitin®. Additionally, the use of web-based tools can be the excellent sources for teaching writing skills in an interactive way, so the students can use the online paraphrasing tools as the source to make better writing especially paraphrasing essays, but still, the tools cannot do all steps of paraphrasing, as reading or understanding texts are not applied by the online paraphrasing tools. Fortunately, suggested options were provided also by those tools so that the users could learn and decide on the correct words, phrases, clauses, or sentences that best replace the ones in the source text.

It can be summed up that online paraphrasing tools can overcome the students' difficulties in paraphrasing, for example in changing synonyms, changing parts of speech, changing the word order, changing active to passive or vice versa, and stating the original text from the source. Although the tools can do all of the paraphrasing strategies, they cannot do all of the steps in paraphrasing. As people know that the first thing to do with paraphrasing is to understand or read the text, but the online paraphrasing tools cannot do the reading process. The tools also could not give the 100% accurate paraphrased version because the citation should be typed manually by the students.

CONCLUSION AND RECOMMENDATION

This present study showed that all of the 27 Mechanical Engineering Vocational Education students were facing the academic writing difficulties especially in paraphrasing skill, but only 16 students used the online paraphrasing tools as the assistant, such as *paraphrasing-tool.com, quillbot.com, prepotseo.com, spinbot.com,* and *the bride*. All 16 students encountered paraphrasing difficulties in four aspects: content, structure, language use, and paraphrasing strategy. In terms of content, students' most challenge came from the paraphrasing. In terms of structure, the students find it difficult to use punctuation correctly. Concerning with the language use, the most difficult part is to identify the types of part of speech. At last, the students thought that the difficulties in paraphrasing strategy was how not to state the same information with the source text.

Besides, the results also revealed that employing online paraphrasing tools could help students to overcome academic writing difficulties in terms of content, structure, language use, and paraphrasing strategy. But a significant result of the use of online paraphrasing tool in academic writing was in term of ensuring the use of appropriate grammar. The online paraphrasing tools could also help the students in paraphrasing the proper discourse markers, changing part of speech, using proper tense, rewriting the source text into a paraphrase with different writing, and changing words from the source text. Furthermore, the paraphrasing tolls helped change the active sentence into passive voice and vice versa, find synonyms to paraphrase, and change the sentence structure of the source text. Even though paraphrasing tools could not provide 100% correct paraphrased version of certain source text, they were still good and helpful enough to use, respondents said, especially for those with limited English language ability. Therefore, since online paraphrasing tools cannot do reading or comprehending the text competently, the students should use the tools with their critical thinking and guidance from the teacher.

To conclude, the online paraphrasing tools can be an option or solution for the beginner learners of English, either English major students or non-English major students such as the Mechanical Engineering Vocational Education students, to overcome the paraphrasing difficulties when writing certain piece of texts. Further research is needed in which a more significant number of participants and various academic writing difficulties should take part in, and a variety of research instruments should be employed to gain depth insight into the employment of translation machines and paraphrasing tools to overcome students' academic writing difficulties.

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