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STUDENTS' READING COMPREHENSION SKILL: THE ROLES OF TEXT READABILITY AND QUESTION DIFFICULTY

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Abstract

This research is trying to investigate whether students' difficulties in comprehending high-order questions are related to the readability of the reading text and the difficulty of the questions. The subjects in this research are freshmen in Institut Teknologi Kalimantan. Using random sampling, students with different levels of reading skills are chosen. This research asked students to answer reading comprehension tests, consisting of questions ranging from literal to evaluative questions, with reading texts ranging from easy to difficult. The result shows that in almost all levels of reading texts, inferential and evaluative reading questions are considered as the most difficult, as shown by the few numbers of correct answers. The level of text readability also influences students' comprehension with the 'easy' text has the most correct answers and the 'difficult' text the least. It can be seen that students need to be introduced to a variety of texts and to be taught to answer questions with different levels of difficulty.

Keywords

Reading Comprehension, Reading Skill, Text Readability, Inferential Reading, Evaluative Reading

1. Introduction

1.1 Background of the Research

When English is taught as a compulsory subject in the first year of university, the learning outcome may vary significantly. Generally, EFL learners come to the class with an averagely lower proficiency level that later yields a less satisfactory level of proficiency at the end of the program. In reading, for example, many undergraduate students are still having difficulties in answering higher-level reading questions, like inferential and evaluative reading questions. This is shown clearly when, at the beginning of their study, all freshmen are required to take an English proficiency test, which is modeled like a TOEFL test. The result of the test was that most of the freshmen got less than 400 points on average. The result was especially low on the reading section of the test. In most universities in Indonesia, including Institut Teknologi Kalimantan where we work, one of the requirements for graduating is reaching a certain minimum score in a paper-based TOEFL test. This means that improving students' reading comprehension skills is a matter of importance.

The problem in reading comprehension among the students is not only evidenced by the result of their English proficiency test. The result of the PISA test in 2018 also shows that their reading comprehension ability is still below expectations, being among the bottom 10 countries and the score keeps its downward trend since 2009. Most Indonesian students “can identify the main idea in a text of moderate length, find information based on explicit, though sometimes complex criteria, and can reflect on the purpose and form of texts when explicitly directed to do so” (PISA, 2019).

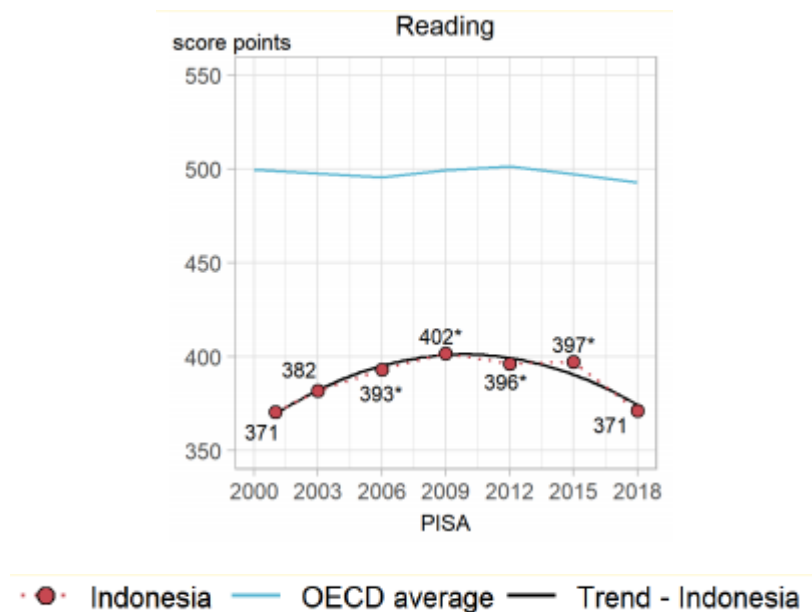


Figure 1: Trends in Indonesia Reading Performance (PISA, 2019)

Improving students' reading comprehension skills is a very important agenda in Indonesia, for there are numerous benefits to having a well-read future generation. One of the benefits of having good reading skills is related to their academic performance since one of the things students can do to increase their academic performance is by improving their reading comprehension proficiency. (Madhumathi & Ghosh, 2016). Thus, considered as one of the critical skills, efficient reading comprehension skills in an academic setting is crucial for any university students (Grabe, 2014).

There are various aspects that can influence students' comprehension of a text. Aside from having an adequate foundation of reading skill, students also need to have "(a) automaticity, (b) higher-level language comprehension processes, (c) background knowledge and schema construction, (d) knowledge of text structures, and the capacity of different memory structures to support general reading comprehension" (Basaraba, Yovanoff, Alonzo, & Tindal, 2013). In addition, the comprehension can also be influenced by several outside factor such as lexical features (Barrot, 2013), syntactic construct (Brimo, Lund, & Sapp, 2018; Grabe, 2009), text readability (Madhumathi & Ghosh, 2016), phonological awareness and vocabulary knowledge (Ihata & Ihata, 2017), and many more.

In this article, we are going to explore the roles of text readability and comprehension question difficulty in students' reading comprehension scores. We want to find out whether reading ease during reading comprehension activity can be connected to text readability and to find out which level of text readability our students are comfortable at and which level they the most difficulty. We also want to know students' ability in answering low and high order questions. The answer to this question will help in determining which type of question is considered difficult to answer and thus the result can be adopted in the learning process.

1.2. Research Questions

In this research, there are two questions we want to answer, which are (1) what roles do text readability and question difficulty have in reading comprehension, and (2) which level of text readability and type of question that hinder our students in succesfully answering reading comprehension questions.

2. Method

2.1 Participant

We asked undergraduate students in their freshman year to participate in the reading test; all around the age of 17-19. Because a paper-based TOEFL test is one of the requirements for graduation,

we want to have information on the skill level of the freshmen in order to obtain data that can help them pass the standardized English test later in their senior year. The participants were of mixed gender with different levels of English skills. They also came from different majors. 50 participants chosen using random sampling took the reading test at the same time.

2.2 Test Item

The reading test comprised of 5 reading texts of different level of readability. The readability level of the text was analyzed through an online readability program from <http://www.readabilityformulas.com/free-readability-formula-tests.php>. The results of the readability text are shown in the following table. There are actually 8 readability formulas used in the program, but we will only show some of them in Table 1.

Table 1: The Readability of the Texts Used in the Reading Test

Text	Flesch Reading Ease score	Flesch-Kincaid Grade Level	Automated Readability Index	AVERAGE GRADE LEVEL	AVERAGE TEXT LEVEL
Text 1	83.2	4.3	3.9	5	Easy to read
Text 2	73.2	5.9	5	6	Fairly easy to read
Text 3	66.2	7.3	6.3	7	Standard/average
Text 4	56.7	10.7	11.6	11	Fairly difficult to read
Text 5	41.4	13.5	14.5	14	Difficult to read

Each text was followed by several questions consisted of literal, inferential, and evaluative questions. The questions were in the form of multiple-choice. The participants answer the questions using a computer (computer-based test) for 60 minutes.

2.3 Research Procedures and Analysis

There are three steps in the data collecting procedure, which are: (1) developing the reading test consisting of 50 multiple-choice questions with 5 reading texts, (2) holding the reading test to all participants, and (3) analyzing the data from the reading test's result. The data analysis is focused on descriptive analysis, which means that there will not be any statistical analysis of the data.

3. Result and Discussion

3.1 Overall Reading Test's Score

In the general score for students' ability in answering comprehension questions, less than 50% received a score above 50 points. As can be seen in Figure 2, there were only around 40% of the

participants who receive above 50 points with the highest score are only 78 and the lowest score is 20. The result shows that for the most part, most of the students are still having difficulties in answering comprehension questions, especially those with higher-level questions. As more than 50% of the test items consist of higher-level questions, literal and evaluative, it can be seen that the students face more problems in their comprehension of the text.

Some may argue that the lower score obtained might stem from the usage of a computer-based test, instead of a paper-based test. Ihata (2019) mentions that both paper-based and computer or online-based tests can be used interchangeably without much problem, and using the online tests is beneficial in reducing the time and cost of a test. However, in order to ascertain that one of the causes for the lower score is not students' unfamiliarity with using a computer, we let students be familiar with how to operate the program and give them time to try out the test using several sample questions.

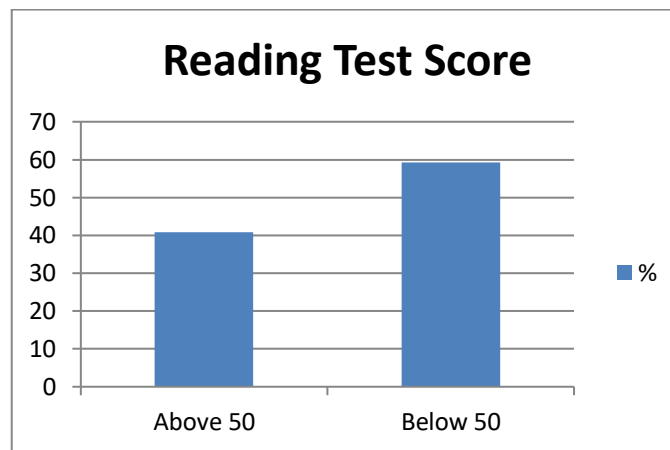


Figure 2: The Trend in Reading Comprehension Score

3.2 Text Readability and Students' Reading Comprehension Skill

In regard to the correlation between the readability level of the text and students' reading comprehension, the result is displayed in the following graph (Figure 3). 51.6% of the participants can answer questions correctly in the 'easy to read' text. There are 48.6% of participants who choose correct answers for both the 'fairly easy to read' text and 'standard' text. As for the 'fairly difficult to read' text and 'difficult' text, the percentage for participants with correct answers are 47.3 and 46.7 respectively. The data shows that, indeed, the higher the readability of a certain text, the easier it is for students to comprehend, and therefore make it easier for them to answer the questions.

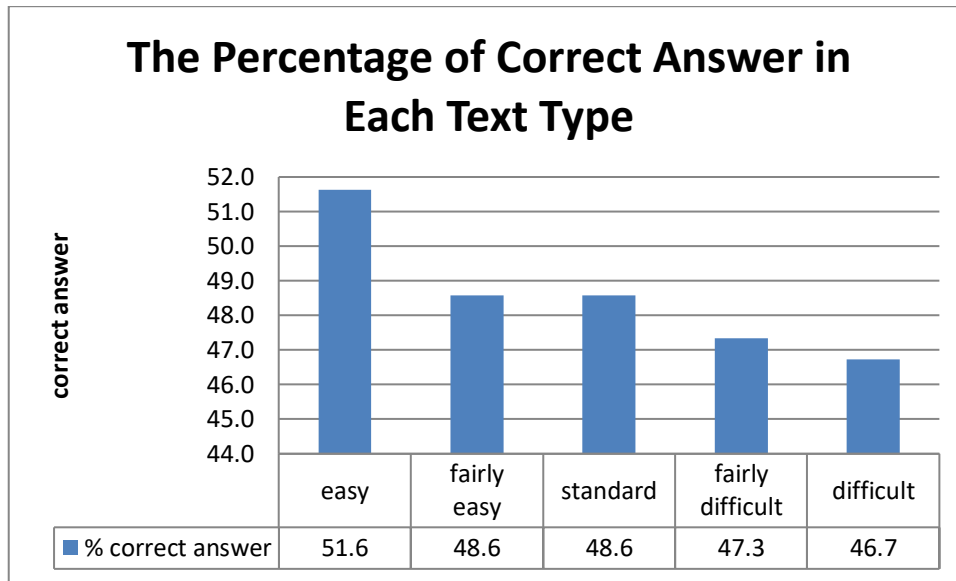


Figure 3: *The Correct Answer in Different Level of Text Readability*

The complexity of the text in a reading activity will hinder students’ comprehension as the complexity grow higher (Spencer et al., 2019). The data suggests that most of the participants are more at ease in reading the ‘easy’ text. According to the readability program, an ‘easy to read’ text is suitable for learners in the fourth and fifth graders (around eight to nine years old) whose native language is English. The participants consisted of university students in their 17s to 19s, yet we can see from the data that a ‘fairly easy’ text (suitable for 10-11 years old) provide some obstacles in their comprehension, let alone the college level ‘fairly difficult’ and ‘difficult’ levels.

The level of text readability will influence students’ reading fluency and in turn, will affect their reading comprehension. Rasinski (2014) explains that reading fluency is an important part of reading comprehension and to boost the fluency the instructors need to take into account the next level of readability that they give to their students. It means that easy text should not be given all the time, but it is necessary to give them texts that are a little bit above their level until they achieve the level of text readability in their objectives.

Considering the text difficulty in an English standardized test such as TOEFL, most of the texts in question are in ‘standard’ or above level. Thus, the fact that most students failed in their reading section of the text is understandable. The data from this research is thus can be used as a reference when choosing reading texts in the classroom.

3.3 Question Difficulty and Students’ Reading Comprehension Skill

It is said that among three types of comprehension questions, literal and evaluative questions are the hardest types for students to answer (Spencer et al., 2019). The result of the reading test taken

by the participants proves that the statement is relevant. More than half of the literal questions (53.5%) were correctly answered, while the percentage of the correct answer for inferential and evaluative questions was at 42% and 48.5% respectively. The participants seem to find literal questions easier than the inferential and evaluative questions. Even though if the difference between the two types of questions is compared, which is 5% and 11.5% respectively, the difference might not be that big, yet it can at least show that many of the participants still have trouble answering both types of questions.

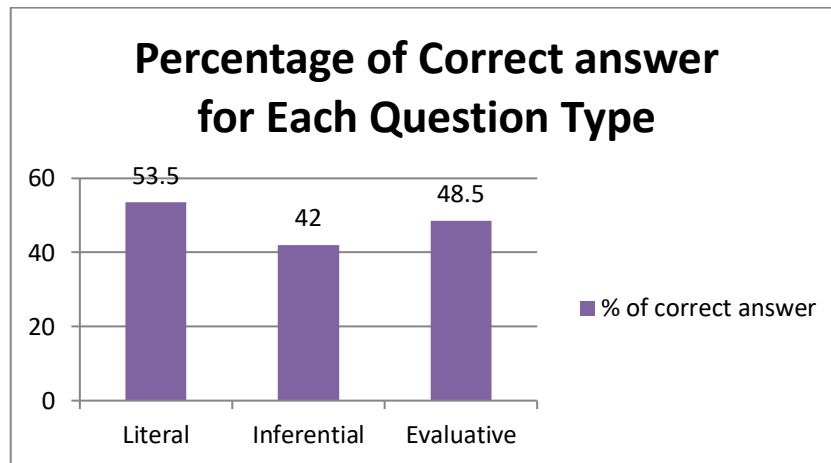


Figure 4: *The Correct Answer in Different Level of Question Difficulty*

Literal questions, lower-order questions, might be considered ‘easier’ to answer according to the data, but in actuality, it is not a matter of easy or difficult. It should not be mistakenly concluded that higher-order comprehension questions mean more difficult questions compared to the lower-order comprehension skill, because it just means that the higher-level questions are closer in a matter of ‘conscious introspection’ by the reader (Grabe, 2014).

Literal questions, which basically ask for information clearly stated in the text, are considered as the basis of reading comprehension, which can be done even by those at the beginner level. Literal comprehension is usually easier to achieve than inferential or critical comprehension, even with different genres of text (Saadatnia, Ketabi, & Tavakoli, 2017). Thus, the fact that the highest percentage of the correct answers is in the literal category is not surprising. The surprise is when the percentage of the correct answers in the evaluative questions is higher than the inferential questions.

Inferential reading comprehension is usually called as reading beyond the lines, while evaluative reading comprehension is reading beyond the text; they require different types of reading strategies. Evaluative reading is usually considered as “the most complex level of reading

comprehension” (Basaraba et al., 2013) and thus is expected to have the least number of correct answers. The fact that it is not is quite curious, to say the least.

The result of the undergraduate students’ low level of comprehension, which is shown by how easier the participants are in answering literal questions than inferential or evaluative questions, might be caused by years of academic reading activity mostly dominated by lower comprehension questions. The Ministry of Education in Indonesia has already directed all teachers to build students’ higher-order thinking skills (HOTS) through the 2013 Curriculum. A lot of efforts were spared to teach the teachers, and even module for that was freely and readily provided (Setiawati, Asmira, Ariyana, Bestary, & Pudjiastuti, 2019). Yet, most of the questions in students’ English textbooks are mostly literal comprehension questions, which are in the level of lower-order thinking skill, with few higher-order questions scattered around. For example, in one of the English textbooks published by the Indonesian Ministry of Education, more than 80% of the questions are comprised of literal comprehension questions. (Surtantini, 2019). Even in the matter of English national examination, most of the questions are of the lower level types (Putra & Abdullah, 2019). If this current trend of teaching persists, we do not think that students’ higher-order comprehension will improve anytime soon.

3.4 Analysis of the Hardest Question Items

Further analysis is done to find out whether the hardest questions or questions with the least number of correct answers are the high-order type of questions. Table 2 below shows the bottom five questions that have the least number of correct answers, their difficulties (literal, inferential, or evaluative), and the level of text readability.

Table 2: The Bottom Five Questions

% OF CORRECT ANSWER	DIFFICULTY	TEXT READABILITY
14	inferential	standard
18	literal	fairly difficult
22	inferential	fairly difficult
24	literal	fairly easy
24	evaluative	standard

The question which only obtained 14% of all participants to answer correctly was an inferential question based on the ‘standard’ text, while the penultimate question was a literal question based on a ‘fairly difficult to read’ text, with only 18% of the participant were able to answer it correctly. The third is an inferential question from ‘fairly difficult’ text with 22% of correctly-answered participants, and the fourth consisted of literal and evaluative questions from ‘fairly easy’ and ‘standard’ texts

respectively. We can see that even though literal questions are considered easier than the other two, two literal questions were included in the bottom five; one of them is even a question based on a ‘fairly easy text.

Considering the lowest-rank question for the least number of correct answers, analysis on questions that the participants were not able to answer is given in Table 3. The question is based on a TOEFL reading question (www.cvauni.edu.vn).

Table 3: Analyzing the Lowest-Rank Question

QUESTION	CHOICES	SOURCE FROM THE TEXT	NOTE
The passage supports which of the following conclusions?	a. By the 1930's jazz was appreciated by a wide audience	During the early 1930's, the number of players grew to sixteen. Henderson' s band was considered a leader in what some people have called the Big Band Era. By the 1930's, big dance bands were the rage. Large numbers of people went to ballrooms to dance to jazz music played by big bands.	CORRECT ANSWER
	b. Classical music had a great impact on jazz	People began to listen to jazz in the same way that they had always listened to classical music.	
	c. Jazz originated in New Orleans in the early nineteenth century	The first jazz musicians played in New Orleans during the early 1900's.	WRONG ANSWER, but is the most chosen answer
	d. Jazz band were better known in Europe than in the United States	The first of Ellington's European tours came in 1933. He soon received international fame for his talent as a band leader, composer, and arranger. Ten years later, Ellington began giving annual concerts at Carnegie Hall in New York City.	

The data in Table 3 depict the reason for participants’ problem in answering this question correctly. Grabe (2009) writes that there is a strong correlation between reading comprehension and syntax and discourse awareness. The problem in the question can be seen as a problem in the understanding of the sentence’s meaning. When they read the sentence ‘The first jazz musicians played in New Orleans during the early 1900's.’ most seem to think that instead of understanding the sentence as ‘the early 1900s was when some of the first jazz musicians decided to play jazz in New Orleans for the first time’, they think that the sentence means ‘the first time any musicians played jazz is in New Orleans during the early 1900s’. It can be seen that having good knowledge of how each word that

form sentence can influence the meaning of the sentence will help them in correctly comprehending the text.

4. Conclusion

Reading comprehension test is something that cannot be separated in undergraduate students' academic life, especially as they are required to take TOEFL test before graduation. Most of the first year students in our campus seems to have below average reading skills, based on the result of the reading test. The reading test is designed to find out the role of text complexity and question difficulty in reading test and the data shows that some of students' reading difficulties come from the level of text complexity, which is above what they are used to, and the type of question difficulty. Most students feel at ease and can answer more questions correctly when given 'easy' text, while the number of correct answers decrease gradually as the texts become more complex. They can also answer more questions if the questions are of literal variety, but less correct answers are found in inferential and evaluative questions.

Of course the conclusion above can only be applied to first year students in Institut Teknologi Kalimantan, and may have different outcome in other universities, due to the differences in characteristics of those enrolled in our campus. In addition, this research is only focusing on the role of text complexity and types of questions, thus we left out other factors that may influence the reading scores. Those factors can be addressed in the next research, as well as continuing the research on how to improve students' reading comprehension based on the result of this research, which we hope to be able to undertake following this research.

Reading comprehension is an amalgamation of many aspects, two of which are students' reading fluency and students' ability to understand the text they are reading not only on the surface level, but also deep beyond the lines and the text. It is not easy to teach those to the students, but based on the research, teaching reading can be initiated by slowly ease students to texts with lower readability and by giving them more higher-order questions in reading activity.

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