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QUALITY AND STRATEGY OF TRANSLATION OF MATHEMATICS TEXT FROM ENGLISH TO LANGUAGE INDONESIA STUDENTS IAIN TAKENGON

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Abstract

This study discusses the translation quality and strategy from English int Indonesiano. the data used were 5 items translation products, from English to Indonesian, The English text translated consisted of 300 words. In this case the students were permitted to use offline/electronic dictionary when translating the text. The study employed the translation strategy theories proposed by Nababan, translation methods (literal and oblique translation) and translation procedures (borrowing, calque, literal translation, modulation, transposition, equivalence, and adaptation). Findings showed that the applicants tended to use the local strategy and literal method in their translation. This affected the quality of the translation, making it less natural in the target language. In addition, there was mistranslation due to inaccurate/wrong word choices, causing the messages within the source text to fail to be conveyed. This study is hoped to bring valuable input for the translation studies and courses in the future.

I. INTRUDUCTION

In this fast information age. Students are required to be able to use English in their scientific fields, students are required to be more familiar with books and articles in foreign languages, especially English to obtain the latest information from around the world. Moreover, developments in the world of science and technology continue to advance. For the world of education and academics in Indonesia, especially, the ability to understand foreign languages has an important position as a mediator between one discipline.

With other disciplines. One of the languages that plays a big role in bridging academics in Indonesia to understand foreign sciences is of course English. It is undeniable that English as a foreign language has a crucial role for most academics in Indonesia in understanding various scientific and technological disciplines.

Moreover, at this time, the latest articles related to education science must be published in English, so that it is easily understood by the general public around the world. This is natural because there are many sources of texts, books, journals and learning materials written in English. As a forum for academics in Indonesia, the IAIN Takengon campus, students at this institution are given English courses for mathematics, with the aim that they will understand the rules of English related to mathematics. It is intended that later these students can and will not be surprised in equipping themselves with sources of scientific information in English which is not their mother tongue. Students are required to have good translation skills. Translating according to Newmark, P (1) ,the process of translating is certainly not something that can be taken lightly, because it involves several factors to be successful.

English text books are commonly used in the lecture process at universities, both for English courses and other mathematics content courses. The obstacles faced by students so far are the lack of ability to understand readings/texts before finding mathematical concepts in the readings. Therefore, the ability to understand reading in English is very necessary so that students can understand the mathematical concepts that exist in a text book. Bell in Orton (2) suggests that there are 360 basic mathematical vocabularies or terms in English. These

vocabularies can be found in all topics in mathematics, namely algebra, geometry, analysis, statistics, and combinatorics. The thing to note when students translate mathematical vocabulary in English is that there are differences in meaning between mathematical terms and terms commonly used in everyday life.

Speak English is because students are not accustomed to reading English textbooks and dependence on machine translation assistance. The help of machine translator is certainly very needed, but students often do not refine the translation results. This causes the results of the translations made by students are still impressed word for word and not completely in accordance with the context of the sentence. The thing that should be done when translating is reading and understanding the text as a whole first, then after being translated (whether with the help of a machine translator or not) the sentences are refined according to the context of the reading. This can minimize errors in the translation of mathematical texts in English.

Strategies and techniques used by students also need to be seen and observed. This will contribute for researchers to better know the strengths and weaknesses of each student in translating English texts. The researcher thinks that this factor is worth exploring because the quality of the student's translation will be closely related to the student's line of thinking in digesting the meaning/text message of the source language (English) so that it can be understood properly and correctly in the target language (Indonesian).

Strategy in understanding and translating the text, it will be used as reference material for research in the field of Indonesian translation studies in general and for academic references at IAIN Takengon in particular.

This study seeks to determine the quality and strategies of students of the Mathematics Study Program at IAIN Takengon when translating English texts into Indonesian,

II. METHOD

The research method used is descriptive qualitative. This study describes the analysis of errors in the translation of English texts carried out by Tadris Mathematics (TMA) students. Data was collected from 10 TMA students who took the English for Mathematics course in the 2017/2018 academic year. The instrument used is an English text with a mathematical context regarding Mathematial expressions with a topic that is a piece of text in the book English for Mathematics written by Ega Gradini M.Sc.

Data analysis was carried out in 3 stages, namely: data condensation (data reduction), data presentation, and conclusion drawing (3). At the data condensation stage (data reduction), the results of PMat students' work are classified based on the two translation strategies and then reduced to focus on math vocabulary and mathematics learning. At the data presentation stage, the reduced data is presented in a table and then analyzed descriptively. The last stage is drawing conclusions based on the two stages that have been carried out previously.

III. RESULTS AND DISCUSSION

The researcher gave an English mathematical text about Mathematical expression. This text was given to students as a task to translate English-Indonesian text within 30 minutes using an offline dictionary tool. Of the 10 students who did this assignment, all students were able to complete the translation within the specified time limit. Based on the data obtained, it is known that all students are able to complete the translation of all sentences. In general, the difficulty of students in translating this text is the existence of mathematical vocabulary and mathematics learning that cannot be adapted for translation by students. Therefore, the discussion on the results of this study focused on mathematical vocabulary, learning mathematics vocabulary, and conformity to the reading context.

Here is a short example of English text in mathematics.

Mathematical expressions

In algebra, letters such as a, b,c,x or y are used to stand for numbers, to show that you are adding two numbers, just write a+b (or any two letters). To show that you are subtracting one number b

from another number a, write a-b. to show that you're multiplying two numbers x and , write xy. The symbols in the paragraph are also called expressions. Expressions that have letters are called algebraic expressions. This distinguishes them from numerical expressions, those that consist only of numbers. The letters in an algebraic expression are called variables.

As with the numerical expressions……

Following presented in table 1, the data from the translation of mathematical vocabulary and mathematics learning contained in the text.

Table 1. Vocabulary and student translation results

No.	Kosakata	Terjemahan
1	Sum	Jumlah, keseluruhan, hitung
2	Decreased by	Diturunkan, kurangi
3	quotient	Hasil bagi, bagi, kuotasi
4	Increased by	Kenaikan,naik
5	difference	Perbedaaan, pembeda
6	More than	Lebih dari, banyak dari
7	Less than	Kurang dari, lebih sedikit dari
8	subtraction	pengurangan
9	times	Kali, waktu
10	One third	Sepertiga, satu ketiga
11	One half	Setengah, satu separuh

Based on Table 1, it can be seen that students know well the translation of each math vocabulary and learning mathematics. In eleven vocabulary Sum, Decreased by, quotient, Increased by, difference, More than, Less than, subtraction, times

One third, One half,

Most of the students can translate well, although there are some words that slightly deviate from the original meaning. These results indicate that all mathematics students have understood well and are familiar with these vocabularies. Thus, PMat students have done the "comprehension strategies" stage quite well.

Production Strategies

Furthermore, it will be explained how the results of student translations in sentences

the essence of the text related to the presence of conjunctions (connecting words).

Conjunction is part of the part of speech that functions as a link between two words, clauses, or sentences.

Coordinate Conjunction

Most of the students succeeded in translating coordinating conjunctions in mathematical texts. Coordinate conjunctions are conjunctions used to connect two sentences that have the same idea, or can be called contain the same idea.

Coordinate conjunctions cannot be used to connect two sentences with a cause-effect relationship or continuous events. Some students are not so proficient in the technique of translating coordinating conjunctions.

Correlative Conjunction

Students in translating sentences are still constrained in presenting correlative conjunctions. Correlative conjunction is a conjunction that is used to connect two sentences that are not the same idea, but are still related. Here's the conjunction

between…and…	If…then…
Both…and…	Not…but…
Either…or	Not only…but also…
Neither…nor	Rather…than…
From…to	The more…the less…
Hardly…when…	The more…the more…
No sooner…than…	Whether…or…

Scarcely…when… Just as…so…

Some students still fail to translate some conjunctions, for example
In use (both…and…)
Both rectangle and parallelogram have four sides
Students translate with sentences (Both rectangles and parallelograms have four sides), the more appropriate translation should be (both rectangles and parallelograms have four sides). This is an indicator that topics related to conjunctions also need attention for students to understand better, so as not to cause misinterpretations.

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on the research data, it can be concluded that mathematics students are quite familiar with mathematics vocabulary and learning mathematics in English, thus the "comprehension strategies" stage has been carried out quite well. However, it appears that students use the type of word-for-word translation which results in the translation results being less smooth and the meaning less precise in the context of phrases, clauses and sentences. So it can be said that the stage of "production strategies" is still not good. Recommendations for students are to increase their willingness to read and understand English mathematics text books. The translation process should be carried out carefully so that errors in translating can be avoided. Furthermore, the recommendation for English language teachers for Mathematics Teaching is that the use of mathematical terms in English needs to be improved by adding their application in full text so that students gain additional knowledge and can apply them when translating these terms.

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