THESIS

COMPARATIVE STUDY BETWEEN THE ACCURACY OF GOOGLE TRANSLATE AND BING MICROSOFT TRANSLATOR IN TRANSLATING WORD FROM ENGLISH TO INDONESIAN

BY:

MUH ICHLASUL AMAL

H0117341

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ABSTRAK

MUH ICHLASUL AMAL: Studi Perbandingan Keakuratan Google Translate dan Bing Microsoft Translator dalam Menerjemahkan Kata Dari Bahasa Inggris ke Bahasa **Skripsi. Indonesia. Majene: Fakultas Keguruan dan Ilmu Pendidikan Universitas Sulawesi Barat, 2024.**

Penelitian ini membahas kesalahan-kesalahan yang dilakukan dalam penerjemahan antara dua MT, Google Translate (GT) dan Bing Translator (BT) dan membandingkannya, materi terjemahannya adalah dua cerita dongeng naratif dari buku karya Joseph Jacobs (2002), dua dongeng tersebut ialah: *cerita Jack dan Pohon Kacang*, dan *Kisah Tiga Babi Kecil*, penelitian ini menggunakan metode penelitian deskriptif kualitatif. Tujuan penelitian ini adalah 1) Untuk mengetahui, Mesin Terjemahan mana antara Google Translate (GT) dan Bing Translator (BT) yang mempunyai hasil lebih akurat dalam menerjemahkan dua materi terjemahan ke dalam bahasa Indonesia, 2) Untuk mengetahui, Kesalahan apa saja yang ditemukan dalam penerjemahan narasi dongeng menggunakan Bing Translator dan Google Translate. Teknik analisis data akan didasarkan pada Sugiyono (2017) yang meliputi, reduksi data, penyajian data, dan penarikan kesimpulan. Peneliti akan membandingkan kualitas kedua mesin terjemahan tersebut dengan menggunakan rubrik penilaian meliputi keterterimaan, keterbacaan, dan keakuratan dengan klasifikasi kesalahan yang berfokuskan pada keakuratan, Berdasarkan rubrik penilaian GT secara keseluruhan penilaian dari kedua materi narasi dongeng lebih akurat dibandingkan dengan BT yang menjadikan Google Terjemahan pilihan yang lebih baik bagi pengguna dalam menerjemahkan Bahasa Inggris ke Bahasa Indonesia, Google Terjemahan berkinerja lebih baik di sebagian besar kategori kesalahan dengan total keseluruhan 58 kesalahan dibandingkan dengan Bing Translator dengan lebih banyak kesalahan yaitu 77 kesalahan..

Kata Kunci: *mesin terjemahan, Google Translate, Bing Translator, kualitas terjemahan, akurasi, kesalahan terjemahan.*

CHAPTER 1

INTRODUCTION

A. Background

The presence of the English language as a *lingua franca (ELF)* has risen in the recent year following the improvement in technology, especially in social media which made more and more people interested to learn the language to open more opportunities, as stated by Anna Mauranen in the book The Routledge Handbook of World Englishes by, that English as a language has spread internationally contrast to the other languages and spoken more frequently by the people that learn it as a second language compared to the natives who had it as the mother tongue (Mauranen, 2010), in saying that people that want to learn the languages, first need to know the meaning of the word through translation.

Translation according to Barzegar " translation is defined as an attempt to replace a written message and or statement in one language by the same message and or statement in another"(Barzegar Hossein, 2008), every expert have a different idea for the definition however it all have almost the same purpose which is creating a word with the same meaning in both languages, in the modern era there is new kind of translation medium called Machine Translation (MT).

Machine Translation (MT), machine translation is a method of translation that exists in the modern era, where artificial intelligence (AI) automatically translates content from one language to the other, the

concept of machine translation can be found in the early 17th century, the Georgetown experiment (1954) develop an automatic translation of over 60 romanized Russian into English through a computer, it was an influential display of Machine Translation which result in further development of MT, an example of such machine is Google Translate and Bing Translator, the existence of such machines has brought huge contribution in helping people understand the message from different languages, yet the MT cannot be fully relied on because of some deficiency in the result of translation, majority of people that used MT has taken the translated result as the literal meaning without considering the validity of such result,

To create a good translation result the translation needs an assessment, where it features two aspects, Intelligibility (the translation result is understandable), and Fidelity (the message transmitted by the translation corresponds exactly to the original message) (Mongard, Richard, 2014), therefore assessment would be the determinant of the quality of the translation. A good translation needs to at least contain semantic aspects, such as referential meaning, grammatical meaning, and contextual meaning.

Based on pre-research that the researcher has conducted, in a school environment the majority of the students had been using some kind of MT to understand the English language, one MT, in particular, is Google Translate, Google translate had become the main way for students to learn languages, however the translation result of the Google translate

had been deemed unreliable, especially in translating a complete sentence, in a study with the title of *Problems In the Application of Google Translate As a Learning Media in Translation,* From the analysis, it was found that the biggest problems often faced by the students of English Literature Department of USU were the inaccuracy and mismatch of the meaning translated which reached 31%, followed by the inaccuracy of the language structure in the translation result which reached 30%. On the other hand, the findings also showed that the best solution to deal with these problems was to make self-corrections and check the meaning of some suspected words in the dictionary and make the best choice according to the context(Sembiring Brahmana et al., 2020), in a study with the title *Accuracy of Google Translate in translating the directions and counseling points for top-selling drugs from English to Arabic, Chinese, and Spanish,* the result showed For the top 100 drugs, 38 unique directions for use and 170 unique counseling points were identified for translation. For the 38 directions for use, 29 (76.3%) of the Arabic translations were accurate, 34 (89.5%) of the Chinese (simplified) translations were accurate, and 27 (71%) of the Spanish translations were accurate. For the 170 counseling points, 92 (54.1%) of the Arabic translations were accurate, 130 (76.5%) of the Chinese (simplified) translations were accurate, and 65 (38.2%) of the Spanish translations were accurate. Of the 247 inaccurate translations, 72 (29.1%) were classified as highly clinically significant or potentially life-threatening(Cornelison et al., 2021), however, the majority of the students still relied on Google translate,

therefore some teachers had introduced some kind of alternative for Google translates such as Sederet.com, Bing Translator and other applications either online or offline, even with all of the exposure that the teacher had given the new alternative, the students still relied on the Google Translate.

In this research, the researcher would examine errors made in translation between two MT, Google Translate (GT) and Bing Translator (BT), the translation material is two narrative fairy tales stories from the book by Joseph Jacobs (2002), the two fairy tales stories is *Jack and The Beanstalk*, and *The Story of The Three Little Pigs* (Jacobs, 2002).

Based on the background above the researcher took the title Comparative Study Between the Accuracy of Google Translate and Bing Microsoft Translator in Translating Word from English to Indonesian.

B. Problem Identification

Based on the background described above the problem identification of this study are:

1. Many errors in translation happen as a result of the translation machine that students have used

2. The lack of dependable Machine Translation (MT) when learning the English language

C. Research Focus

To avoid the broad scope of the research, this study would focus on the researcher's limits the focus of the research on researching:

1. Which Machine Translation between Google Translate (GT) and Bing Translator (BT) has a more accurate result in translating two narrative fairy tales to Indonesian?

2. What errors are found in the translation of narrative fairy tales using Bing Translator and Google Translate?

D. Research Objective

Based on the research questions above, this study aims to:

1. To find out, which Machine Translation between Google Translate (GT) and Bing Translator (BT) have more accurate result in translating two translation material into Indonesian

2. To find out, What errors are found in the translation of narrative fairy tales using Bing Translator and Google Translate?

E. Research Benefits

1. For students

The researcher hoped this research able to give additional knowledge to students about which Machine Translation (MT) can be dependent on translating material.

2. For Teachers and Lecturers

The researcher hoped this research able to give additional knowledge to teachers about which Machine Translation (MT) students can depend on and trust in translating material,

3. **For future research**

The researcher hoped this research able to encourage other researchers to explore various kinds of Machine Translation (MT) that can translate more accurately and improve this research

CHAPTER II

LITERATURE REVIEW

A. Previous Related Studies

Some research has been conducted before about Machine Translation (MT), one of them with the title of *Semantic Error Analysis of Instagram Machine Translation From Indonesian to English* (Fadilah, 2017), the study aims to know the translation error in semantic aspects. Some of them are referential, grammatical, and contextual meanings in the translation that is produced by Instagram machine translation by using the descriptive-qualitative method according to Sayogie's theory. The Subject, namely, captions are taken from HTI's Instagram account regarding their postings in response to the Islamic defensive action of 2016. The findings are compared to the target language by recognizing the translation errors of semantic aspects. As a result, the analyzed data show two translation errors occur in referential meaning, twenty-two translation errors occur in grammatical meaning, and nineteen translation errors occur in contextual meaning. All translation errors show that Instagram machine translation cannot produce a good translation, and humans as a translator still have a crucial role in translating.

The second study, with the title *Bing Translator and Google Translate Performance in Translating English Literary and Academic Texts into Indonesian* (Ariany, 2017). The research examines errors made in the translation products of Bing Translator (BT) and Google Translate

(GT), The translation products to be analyzed are an English literary text, Hemingway's Cat in the Rain, and an academic text, Barry's "Feminism and Feminist Criticism", The researcher uses a sample study to collect the data. Sample-taking is conducted purposively. Therefore, the samples consist of the data which matches the requirement or characteristic that can represent the research purpose. The error analysis with the theory of semantics is conducted for the analysis. The findings number of errors found in GT's translation is smaller than in BT's. It means that generally, GT does better in transferring the semantic concepts and their relationships with one another. Furthermore, if the different text types are looked at more closely, BT and GT show considerably different performances in transferring the relations between concepts of ST to TT. Due to the use of longer, more complex sentence structures in academic text in this study, there is a more complex semantic relation in the academic text rather than in the literary text used in this study.

The third study with titled *Comparison of Translation Quality Between Google Translate, SDL Free Translation, and Tradukka In The Health Article Entitled Vaginal Birth After Caesarean* (Cahyaningrum & Widiyantari, 2018). The study aims to find out a comparison of translation quality produced at an online translation of Google Translate, SDL Free Translation, and Tradukka, The research used a descriptive qualitative approach with a case study design for a single case. The data used in this research was an online article entitled "Vaginal Birth After Caesarean". Objective data was collected using a selective note-taking technique

(criterion-based selection). While effective data was collected through the provision of questionnaires to informants with interviews. The findings There are 34 data found in articles in the form of sentence level, where each sentence is translated using the three online translation services then from the translation data, analyzed the quality of the translation produced in terms of accuracy, acceptability, and legibility. The quality of translation on Google still has a better level than SDL Free translation and Tradukka. In terms of the quality of acceptability, Tradukka cannot be denied a quality that is almost as good as the quality of acceptance from Google. It is different from the quality of translation from SDL Free Translation, in terms of accuracy, acceptability, and readability are very low which ultimately results in poor translation quality.

A study by Mayang Masdhalifa titled *Comparative Study Between Google Translate and Google Docs Translator Quality in Translating Hedging Words BBC News,* the study focused on the quality of translation between two machine translators which is Google Translate and Google Doc Translator in using of hedging words, the researcher used descriptive qualitative method to analyze the data, the translation material in this study is from international news portal the BBC News, the researcher uses 15 news article to find hedging words, the techniques to analyze the data is from Sugiyono which include data reduction, data presentation and drawing conclusion, in which the researcher would find out the difference in quality of translation between two machine translator, based on the accuracy, acceptability and readability (Masdhalifa, 2021).

In another study conducted by Amalia Asokawati titled *The Error Analysis of Google Translate and Bing Translator in Translating Indonesian Folklore,* the research mainly focuses on the lexical error between Google Translate and Bing Translator, the researcher used two folklore from Indonesia which is "Princess Tandampalik" and "Sigarlaki and Limbat", the method that applied in this research is qualitative, in the research finding the researcher has found 103 errors in the translation output by Google Translate, while Bing translator made 95 errors. Google Translate makes 103 errors in total, divided into 12 in missing words, 19 in word order, 64 in incorrect words, and 8 in unknown words. On the other hand, Bing Translator makes 95 errors, with 5 of them missing words, 1 in word order, 88 in incorrect words, and 1 in unknown words. In addition, incorrect words are the most frequent error found in the translation result by Google Translate and Bing Translator. A total of 152 errors in the incorrect word aspect were found. Moreover, incorrect words mainly occurred in the translation of adjectives and adverbs. In this case, Google Translate and Bing Translator mostly translated it in noun form (Asokawati, 2021).

Based on a review of some research above which become a reference for the implementation of this research, the researcher assumes that there are similarities and differences between the research above:

The similarities of the study are the topic of the study which is Machine Translation (MT), the use of the qualitative method approach, and the purposive sampling technique, with this conclusion, it becomes

the reference for continuing and developing the findings of a few of the research above.

The main differences between the study would be the translation material/sample of the study which include two material "*Jack and The Beanstalk*", and "*The Story of The Three Little Pigs*", some of the other study also used different type of translating machine, the first study does not compare two Machine Translation (MT) it only used Instagram Machine Translation, the second study used two MT which is Google Translate and Bing translator however its main focus is the comparison between two different types of reading material which is Literary and Academic text, the third study compares three different MT which includes Google Translate, SDL free translation and Tradukka with health article as the material.

In conducting this research, the researcher hopes that the results of this research can be useful for the future, both for readers and future researchers. The main difference of this study would be the translation material/sample of the study which include two material "*Jack and The Beanstalk*", and "*The Story of The Three Little Pigs*"*, the purpose of this study is to find out which MT can be used as a more accurate translator to help students learn English and other languages.

B. Theoretical Framework

1. Translating

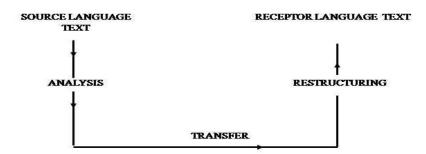**a. Definition of Translating**

These are some definitions of translation already put forward by different linguists, translating is an effort to "replace" the source language text with an equivalent text in the target language and what is translated is the meaning intended by the author (Machali, 2009). Hatim and Munday define translation as "the process of transferring a written text from the source language (SL) to the target language (TL)". In this definition, they do not explicitly express that the object being transferred is meaning or message. The emphasis is on translation as a process (Hatim & Munday, 2004). Bassnet defines the translation generally. She says that translation is to render a written text from one language to another (Bassnet, 2011). Another one by Munday where he states that "translation has several meanings: it can refer to the general subject field, the product (the text that has been translated) or the process (the act of producing the translation, otherwise known as translating) (Munday, 2004), Juliane House explained that translation is the notion of equivalent is equal in value, conveys the similar message and fulfill the similar function. In summary, in the translation process, not only replace or substitute the text but also transfer the meaning (House, 2013).

With all the definitions that are provided by the expert above, translation is an act to transfer and reproduce the closest and equivalent meaning from the source language to the target language.

b. Process of Translation

The process of translation between two different written languages involves the translator changing an original written text (the source text or ST) in the original verbal language (the source language or SL) into a written text(the target text or TT) in a different verbal language (the target language or TL) (Munday, 2016).

Nida and Taber explained simply and generally the process of translation. Nida and Taber introduce three stages in the process of translation. This process begins by analyzing SL into the grammatical and semantic structure of the TL, transferring the meaning, and at last reconstructing the grammatical and semantic structure into the appropriate TL forms to create an equivalent TT. The illustration below from Susan Bassnet's book titled "Translation Studies" Third Edition (Bassnett, 2013)

Picture 2.1 *Nida's model of translation*(Bassnett, 2013, p. 25.)

2. Machine Translation (MT)

a. Definition of Machine Translation (MT)

The improvement of technology in the modern era affects the improvement in the translation field, which come in the shape of Machine Translation (MT). According to W.John Hutchins, in the book *Concise History of the language sciences: from the Sumerians to the Cognitivist* (Hutchins, W, 2014), machine translation (MT) is a computerized system responsible for the production of translations with or without human assistance, the central core of MT itself is the automation of the full translation process,

Hutchins and Somers, in their book *An Introduction to Machine Translation* state that MT is a term used for "computerized systems responsible for the production of translations from one natural language into another, with or without human assistance"(Hutchins, W & Somers, 1992).

In conclusion from the definition provided above, Machine Translation (MT) is a translation that exists in the modern era, where artificial intelligence (AI) automatically translates content from one language to the other.

b. Google Translator

In the year 2006, Google launched Google Translate, Google Translate started using statistical machine translation, which means it translates using a statistical model, and in 2016 Google Translate no longer uses a statistical model it has been changed to neural machine

translation which uses an artificial neural network (NMT) combined with statistical machine translation (SMT) to predict the likelihood of a sequence of words.

Google Translate is a multilingual translating machine that was founded by Google to translate text from the source language to the target language, Google translate had been used by over 500 million people worldwide, making it the number one go-to for people that want to translate word, the translation machine first developed in the year of 2006, and since then it had face many improvements throughout the years, where it originally only translate to less than ten languages to over one hundred languages as of now in the year 2022.

c. **Bing Translator**

Another machine translation is called Bing Translator it's another multilingual translating machine that was developed by Microsoft started from the year 1999 and 2000, it was launched at the year of 2007 one year after Google Translate has launched, and it had fewer languages compared to Google Translate however in 2016 it was introduced as translation using deep neural networks (NMT) in nine of its highest traffic languages, which provide better translation than industry-standard statistical machine learning

d. **Error Analysis in Machine Translation (MT)**

Translation error has often happened in translation results which people sometimes analyze with error analysis According to H. Douglas Brown, error analysis can be defined as an error study "a surge of study

of learners errors", by doing observation, analysis, and classification to show the error in the system (Brown, H, 2007), in addition, Richard and Schmidt define error analysis as a study that focused in analyzing error made by the language learner (Richards & Schmidt, 2002), that conclude that error analysis is a study to analyze the error,

Error Analysis in Machine Translation (MT) according to Hutchins, J., & Somers, H. (1992), explain that one of the most used and easier ways to evaluate MT is by counting the error to find out the amount of how much work on revision or correction needed in the raw output of the translation. Commonly, error analysis is performed by counting "each addition or deletion of a word, the substitution of one word by another, and instance of the transposition of words in phrases" (Hutchins, W & Somers, 1992).

Hutchin and Somers also stated that error analysis needs to be done by "classification of errors by type of linguistic phenomenon and by the relative difficulty of correction" (Hutchins, W & Somers, 1992) because objectivity can be questioned, therefore it needed some kind of error classification assessment it cannot be done just by counting the number of a mistake on the translation result.

e. **Machine Translation Evaluation**

The evaluation of machine translation refers to the process of measuring the result of a translation system, in other word is a way to score the quality of the MT which include a manual evaluation and automatic evaluation.

Manual evaluation, is a way to evaluate through human judgment, in the journal with the title of "*Evaluation of Machine Translation and its Evaluation*" Turian et al(Turian, P et al., 2003) has insisted the importance of human evaluation in evaluating the result of MT, in saying that human evaluation itself is inconsistent and not very reliable and for the automatic evaluation it has more inconsistency compare to the human evaluation

Automatic Evaluation is an evaluation that used metric to evaluate the output of a MT one such metric is BLUE (Bilingual Evaluation Understudy), which is the most popular metric because its provide an accurate result that strongly correlated with human judgments (Papineni et al., 2001).

3. Assessing the Quality and Error of Translation

To access the error and quality in translation there need to be an assessment, translation quality assessment is the most important aspect of the result of the translation, there are three important aspects to assess the quality of translation which include acceptability, readability, and accuracy(M Nababan & Rudolf, 2003).

a. Acceptability

In translation, acceptability is whether or not the translation result is expressed following the rules, norms, and culture of the target language(M Nababan et al., 2012), for example, to translate an English word to Bahasa the translator needs to check if the translation result correctly followed the grammatical structure of the target language

which is Bahasa to be deemed acceptable as a good quality translation result.

b. Readability

The reader and translator have to be able to read the result of the translation without coming into complete confusion about what it means in other words the result needs to make sense to the reader, in the worst-case scenario it can make the reader misunderstand its meaning.

c. Accuracy

In translating accuracy is the most important aspect that needs to be assessed which means the translation result must transfer the message from the source language to the target language correctly, the translator must have the ability to convey the message accurately to the reader cause it would affect the reader experience(M Nababan et al., 2012)

4. Error Classification

Error analysis need some kind of error classification, an existing error classification by Maarit Koponen, in her journal "Assessing Machine Translation Quality with Error Analysis"(Koponen, 2010),Koponen propose that the idea of error analysis in machine translation need an assessment of the machine translation quality output focusing on the semantic aspect of accuracy (translation error) rather than the fluency and the content accuracy (language error), Translation errors is an error which cause by lexical error, and language errors which means form error like punctuation and capitalization.

Koponen roughly defined translation error as "semantic components not shared by source text (ST) and target text (TT) in which semantic components are individual concept and the semantic relations between two concepts" errors based on

The errors between source and target concept are then divided into six categories by koponen: omitted, added, untranslated, mistranslated, substituted, and explicitated concepts.

Focusing on the semantic aspect off assessing error analysis in machine translation is the main aspect to determine quality of translation, Koponen study and her theory is the main guidelines to assess the quality of translation through error analysis.

5. **Semantics**

According to Sebastian Loebner from his book *Understanding Semantics* (2012), "*Semantic is the part of linguistics that is concerned with meaning*"(Löbner, 2012). as showed in explanation above semantic is really important in knowing structure and meaning of word, which can be used as one of the main theory as the base and guideline in error analysis in order to showed the error in translation in this research. Koponen error analysis is mainly emphasized toward the semantic aspect which made the error analysis perfectly suited on assessing machine translation quality in this research, with the semantic theory researcher can determine which error type has occur in the translation result by comparing the semantic component of source languages with the target languages, koponen analysis also emphasize on the relation

between words, how one word can relate to other in scope of semantic

roles.

CHAPTER III

RESEARCH METHOD

A. Research Type and Design

This research would use a qualitative method, Creswell defines qualitative research as ".an inquiry process of understanding a social or human problem based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting"(Creswell, 2012). According to Yılmaz, qualitative research is "an emergent, inductive, interpretive and naturalistic approach to the study of people, cases, phenomena, social situations and processes in their natural settings to reveal in descriptive terms the meanings that people attach to their experiences of the world" (Yilmaz, 2013).

The type of qualitative design that the researcher would use is interpretive/descriptive qualitative research. The interpretive or interpretivism model and descriptive research have their roots in philosophy and the human sciences, particularly in history, philosophy, and anthropology. The methodology centers on how human beings make sense of their subjective reality and attach meaning to it. Social scientists approach people, not as individual entities who exist in a vacuum but explore their world within the whole of their life context. Researchers with this worldview believe that understanding human experiences is as

important as focusing on explanation, prediction, and control (Willis, Jerry, 2007).

The researcher would use a library research approach or documentary technique in writing the chapter on literature and theories review, Library research/documentary according to Sugiyono (Sugiyono, 2015) is a technique of collecting data by learning and understanding data that has close relation with the problems from books, theories, notes, and documents. It is a general or specialized library that collects materials for use in intensive research projects (George, Mary, 2008), it requires the researcher to collect all the definitions, theories, and previous studies on a related topic to provide help in the analysis. In analyzing the data, the researcher uses error analysis and comparative study to identify and classify the errors as well as to find out the error in the translation between Google translate and Bing translator

The researcher directly collects all the data from the source text (ST) including two fairy tales stories from the book "English Fairy Tales and More English Fairy Tales" by Joseph Jacobs (2002), the two fairy tales stories *Jack and The Beanstalk*, and The *Story of The Three Little Pigs,* a comparative study which is characterized by observation and recording outcomes without manipulation.

B. Research Schedule and Location.

Schedule and locations are one of the most important aspects of conducting the research, they determine where and when the research is conducted

1. Schedule

The research schedule must be considered before researching because the length of the research affects the accuracy of the research results. The researcher would conduct research starting from the date of the research permit in less than 1 (one) month.

2. Location

The research was conducted in UNSULBAR, the researcher going to translate two translation material using two machine translation

C. Data Source

Research data is any information that has been collected, observed, generated, or created to validate original research findings, according to Bogdan and Biklen data is a type of information that shows answers to research questions, through material collected by the researcher(Bogdan & Biklen, 2007), there are two types of data in research, primary data, and secondary data, according to Sugiyono (2018:456), Primary data are data sources that directly provide data for the researcher. The data is collected by the researcher directly from the first source/primary or where the object of research is carried out. Secondary data according to Sugiyono is

an indirect data source provided to the researchers, for example through other people or documents.

1. **The subject of the research**

   The primary source of data for the research is the two source text (ST), researcher directly collects all the data from the source text (ST) which is taken from the book "English Fairy Tales and More English Fairy Tales" by Joseph Jacobs (2002), in which the researcher uses two fairy tales stories including *Jack and The Beanstalk*, and *The Story of The Three Little Pigs.*

   The data collected in this research are objective data which means they are taken from the ST and TT. The ST are two English texts: *Jack and The Beanstalk*, and *The Story of The Three Little Pigs*. The TT is the translation result from Google Translate (GT), and Bing Translator (BT)

   ST *Jack and The Beanstalk* consist of 22 paragraphs, 911 words, and 61 sentences, the other ST *The Story of The Three Little Pigs* has 7 paragraphs, 807 words, and 48 sentences, each ST has various number of idioms that add to the complexity of the translation process

2. **Document Study**

   With the library research approach, document study is one of the most important sources to obtain additional data/secondary data for the research which includes various reports, references, journals, literature, books, and other documents related to the research problems

D. Research Instruments

1. Reading Material

In this research the researcher would use 2 reading materials, the translation material is two narrative fairy tales stories from the book by Joseph Jacobs (2002), the two fairy tales stories is *Jack and The Beanstalk*, and *The Story of The Three Little Pigs*

2. Machine Translator

Google translate is used as one of the tools of translation, Google Translate is a multilingual translating machine that was founded by Google to translate text from the source language to the target language, Google translate had been used by over 500 million people worldwide, making it the number one go-to for people that want to translate word, the translation machine first developed in the year of 2006, and since then it had to face many improvements throughout the years, where it originally only translate to less than ten languages to over one hundred languages as of now in the year 2022.

Microsoft Translator or Bing Translator is a multilingual machine translation cloud service provided by Microsoft. it had fewer languages compared to Google translate however in 2016 it introduced translation using deep neural networks in nine of its highest traffic languages, which provide better translation than industry-standard statistical machine learning

3. Error Analysis

Error analysis is a method used to document the errors that appear in learning languages, determine whether those errors are systematic, and (if possible) explain what caused them, is a tool that is usually used to find the error in translation, starting by identifying the so-called error which followed by an explanation why the error occurred.

4. Error Assessment

To make sure the result of error analysis is scientific and objective it needs some kind of assessment, an assessment rubric from Nababan which include acceptability, readability, and accuracy(Mangatur Nababan et al., 2012), which the researcher only going to use the accuracy assessment rubric which is:

a. Accuracy

Table 3.1 Accuracy

Translation Category	Identification	Aspects
Accurate	The translation, word, and grammatical structure accurately follows the rule of the target language, and the text message is accurately transferred	a) Word Meanings, b) Technical Terms c) Phrases d) Word Structures

	into the target language	e) Clause
Less Accurate	Most of the translation words and grammatical structure have been accurately transferred into the target language, however, there is still slight inaccuracy in the meaning that has been translated	
Inaccurate	The translation, word, and grammatical structure are inaccurately transferred to the target language or even missing	

(Nababan et al., 2012, p. 50.)

5. Error Classification

To determine the Acceptability, Readability and, Accuracy, the researcher would use translation error categories by Maarit Koponen, Errors based on the mismatches between source and target concepts which is the errors between source and target concept is then divided into six categories by Koponen: omitted, added, untranslated, mistranslated, substituted, and explicated concepts(Koponen, 2010). The elaboration of each error type below is provided by Koponen while the examples are provided by the writer.

Table 3.2 Koponen Error Clasification

No	Types of Concept Error	Meaning	Example
1	Omitted Concept	SL concept that is not conveyed by the TL.	SL: Good morning to you TL: *Selamat pagi*
2	Added Concept	TL concept that is not present in the SL.	SL: I will drink with my buddy in bar TL: *saya akan minum dengan temanku di bar*
3	Untranslated Concept	SL words that appear in TL.	SL: I'm very happy TL: *Saya sangat* **happy**
4	Mistranslated	a TL concept	SL: catch you Later

	Concept	has the wrong meaning for the context.	TL: *Menangkapmu Nanti*
5	Substituted Concept	TL concept is not a direct lexical equivalent of the SL concept but can be considered a valid replacement for the context	SL: he married a great princess TT: *dia menikah dengan seorang putri yang hebat*
6	Explicitated Concept	TL concept explicitly states information left implicit in SL without adding information.	SL: I uninstalled nord VPN TL: *saya menghapus program nord VPN*

(Koponen, 2010, p. 9.)

SL:

There was once upon a time a poor widow who had an only son named Jack, and a cow named Milky-white. And all they had to live on was the

milk the cow gave every morning which they carried to the market and sold. But one morning Milky-white gave no milk and they didn't know what to do.

GT:

Dahulu kala ada seorang janda miskin yang memiliki seorang putra tunggal bernama Jack, dan seekor sapi bernama Milky-white. Dan **yang mereka perlukan hanyalah susu** yang diberikan sapi setiap pagi, yang mereka bawa ke pasar dan dijual. Namun suatu pagi, **si Putih Susu** tidak memberikan susu dan mereka tidak tahu harus berbuat apa.

BT:

Dahulu kala ada seorang janda miskin yang memiliki seorang putra tunggal bernama Jack, dan seekor sapi bernama **Milky-white**. **Dan yang harus mereka hidupi hanyalah susu** yang diberikan sapi setiap pagi yang mereka bawa ke pasar dan dijual. Tapi suatu pagi Milky-white tidak memberikan susu dan mereka tidak tahu harus berbuat apa.

Conclusion:

Bing Translator has more Acceptability, Readability and, Accuracy, compare to Google Translate, Google translation result showed a mistrlanslated concept, the phrases "live on" from "live on" to "Needed" in Bahasa , BingTranslator did not translate the name of the cow however for Google Translate it translate it

E. Data Validity Test Technique

The data validity is the way for the research to be proven as valid scientific research, Sugiyono explains that "test the validity of the data in qualitative research includes the credibility test (internal validity), transferability (external validity), dependability (reliability), and confirmability (objectivity).

1. Credibility

At the credibility step, the researcher validates data by ensuring that the data would be reported matches with data obtained in a field(Sugiyono, 2008), the validity of the data would ensure the credibility of it.

The obtained data would be tested with a triangulation which is the way to achieve credibility, according to Veronica Thurmond "The use of triangulation strategies does not strengthen a flawed study. Researchers should use triangulation if it can contribute to understanding the phenomenon; however, they must be able to articulate why the strategy is being used and how it might enhance the study"(Thurmond, 2001), the researcher would use a theory triangulation where the researcher would use multiple theories or hypotheses when examining situation from different perspective, the main idea here is to compare the result to other similar research result, the hypotheses doesn't have to be similar its best to be different so it can add more diversity. The researcher would compare the result of the

translation with other researcher results, comparing other machine translators other than Bing and Google Translator.

2. **Transferability**

After the credibility, the next step will be transferability, which to demonstrate transferability in qualitative research, the researcher can add a long description, which involves providing adequate details, reading materials, and methods or procedures used to collect data during the study.

3. **Dependability**

The research data must have dependability, the reader will evaluate if the data of the research can be dependable, in which they can use the data for the next future research, furthermore, the data have to fulfill the question of the research and the objective of it, it will need to be dependable enough to fulfill the researcher criteria that have been determined.

4. **Confirmability**

Confirmability relates to the degree of agreement or interpersonal agreement between many people on a data(Sugiyono, 2008), this has to do with the level of confidence that the research study's findings are based on, the research confirmability can be called objective if it's agreed upon by many people.

F. Data Analysis Technique

Data analysis is a process of searching and compiling data from different sources and organizing the data and seeing which one is important and which one needs to be studied and make a conclusion out of, and they are easy to understand(Sugiyono, 2008), according to Miles and Hubberman as cited by Sugiyono there are three activities to analyze data in qualitative descriptive research, these activities are data reduction, data display, and drawing conclusions/verification(Sugiyono, 2008)

1. Data Reduction

Data reduction is a process of selecting, identifying, classifying, and coding data that is considered important in other word simplification through selection, the researcher would be focused on the Errors (independent and Dependent) that are there in the translation material which is two narrative fairy tales stories from the book by Joseph Jacobs, the two fairy tales stories is *Jack and The Beanstalk*, and *The Story of The Three Little Pigs,* using two translation machines to be compared with each other,

2. Data Display

The second step is data display which means the process of simplifying the data in the form of narrative, tables, or sentences. The data would be presented with a table with the intent to make the data easier to analyze which the researcher can conclude easier.

3. Drawing conclusion

In the final step of analyzing data, the researcher would be able to see the data from the data reduction in a table, after which the researcher can draw a conclusion from the comparison between the two machine translators by focusing on the error, and finally, the researcher can draw conclusions from the research

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