

**USING THE BLEU METRIC TO ASSESS THE PERFORMANCE OF
MICROSOFT TRANSLATOR FOR ENGLISH TRANSLATIONS AT
SMPN 3 SUNGGUMINASA**



THESIS

*Submitted to the Faculty of Teacher Training and Education Universitas Muhammadiyah
Makassar in Part of Fulfillment of the Requirements for the Degree of Education in
English Education Department*

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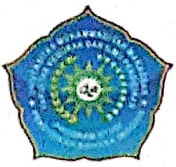
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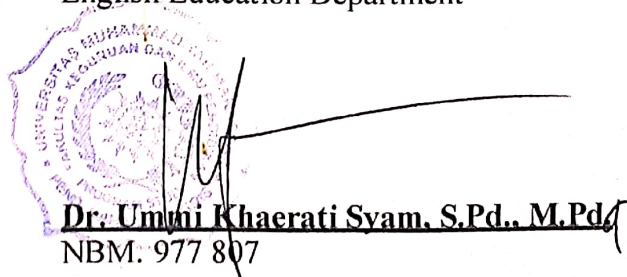
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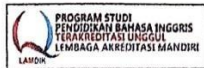
Day / Date	Chapter	Note	Sign
26 Mei 2024	I - III	Abstract Revisi	f.
27 Mei 2024	I - III	Conclude theories Concept and framework	f.
28 Mei 2024	IV - V	Revisi for findings	f.
30 Mei 2024	IV - V	Revisi for conclusions, revisi for abstract result	f.
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MOTTO

Do your best, Let god do the rest

DEDICATIONS

I dedicate this thesis to all the driving factors that have given hope, support and prayers to the author, from the beginning of the preparation to the end of writing this thesis. Infinite thanks to my parents, siblings, family, and all my dear friends and the most special thing is for myself. Because to this point of struggle I can continue to keep on going in the process of completing my final project as a student. I hope that in the future I can become a more diligent person, and be useful to many people, especially the people around me.

ABSTRACT

Azhan Eli Saputra. 2024. *Using The BLEU Metric to Assess The Performance of Microsoft Translator for English Translations at SMPN 3 Sungguminasa.* Faculty of Teacher Training and Education Universitas Muhammadiyah Makassar (Supervised by Firman and Junaid).

The objective of the research was to find out the accuracy of BLEU metric to assess the performance of Microsoft Translator for English translations at SMPN 3 Sungguminasa. This research used descriptive quantitative method. The population of the research was taken from the students at the third grade of SMPN 3 Sungguminasa. This population consisted of 338 students in consisted of eleventh classes. The researcher used purposive sampling technique and chose one class that consisted of 31 students as the sample. The data of this research were collected through translations task. The data were analyzed by using BLEU metric with the original formula of mathematical metric.

Referring to the assessment results using BLEU metrics, Microsoft Translator's assessment findings in terms of accuracy have a total percentage score of 88,86% for accuracy, and of all assessments, there is only one assessment that does not pass 50%, the assessment is at 35.43%, while other assessments are above 50% and there are even some of them who get a perfect match rate of 100%. Based on the results above, it can be concluded that the use of Microsoft Translator is still very feasible to be used to translate text in simple form without having to involve translation experts who must do appropriate proof reading and editing.

Key Word: *Translation, BLEU Metric, Microsoft Translator, Assessment.*

ABSTRAK

Azhan Eli Saputra. 2024. *Menggunakan Metrik BLEU untuk Menilai Kinerja Microsoft Translator untuk Terjemahan Bahasa Inggris di SMPN 3 Sungguminasa.* Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Makassar (dibimbing oleh Firman dan Junaid).

Tujuan dari penelitian ini adalah untuk mengetahui akurasi metrik BLEU untuk menilai kinerja Microsoft Translator untuk terjemahan bahasa Inggris di SMPN 3 Sungguminasa. Penelitian ini menggunakan metode deskriptif kuantitatif. Populasi penelitian diambil dari siswa kelas III SMPN 3 Sungguminasa. Populasi ini terdiri dari 338 siswa di terdiri dari sebelas kelas. Peneliti menggunakan teknik purposive sampling dan memilih satu kelas yang terdiri dari 31 siswa sebagai sampel. Data penelitian ini dikumpulkan melalui tugas penerjemahan. Data dianalisis dengan menggunakan metrik BLEU dengan rumus asli metrik matematika.

Mengacu pada hasil penilaian menggunakan metrik BLEU, temuan penilaian Microsoft Translator dari segi akurasi memiliki total skor persentase 88,86% untuk akurasi, dan dari semua penilaian hanya ada satu penilaian yang tidak lulus 50%, penilaian berada di angka 35,43%, sedangkan penilaian lainnya di atas 50% dan bahkan ada beberapa diantaranya yang mendapatkan akurasi kecocokan 100%. Berdasarkan hasil di atas, dapat disimpulkan bahwa penggunaan Microsoft Translator masih sangat layak digunakan untuk menerjemahkan teks dalam bentuk sederhana tanpa harus melibatkan ahli penerjemahan yang harus melakukan proofreading dan editing yang sesuai.

Kata kunci: Terjemahan, Metrik BLEU, Microsoft Translator, Penilaian

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Makassar, June 2024

The researcher,

Azhan Eli Saputra

TABLE OF CONTENT

COVER	I
LEMBAR PENGESAHAN.....	II
APPROVAL SHEET	III
COUNSELING SHEET FOR A THESIS CONSULTATION.....	IV
SURAT PERJANJIAN	VI
SURAT PERNYATAAN	VII
MOTTO AND DEDICATION.....	VIII
ABSTRACT.....	IX
ABSTRAK.....	X
ACKNOWLEDGEMENT	XI
TABLE OF CONTENTS.....	XIII
LIST OF TABLES	XV
LIST OF FIGURES.....	XVI
LIST OF PICTURES	XVII
CHAPTER I INTRODUCTION.....	1
A. Background	1
B. Problem Statement.....	3
C. Objectives of the Research.....	3
D. Significance of the Research.....	3
E. Scope of the Research	4
CHAPTER II RELATED LITERATURE REVIEW	5
A. Previous Related Research Findings	5
B. Some Related Ideas	7
1. Concept of Translation	7
a. Definition of Translation	7
b. Performance Assessment of Translation	9
c. Translation Ability.....	9
d. Translation Type.....	11
e. Factor of Translation	14
f. Process of Translation.....	14

2. The BLEU Metric.....	17
a. Definition of BLEU Metric.....	17
b. The concept of BLEU Metric	18
c. Steps of BLEU Metric.....	18
d. Disadvantages and Advantages of BLEU Metric	20
e. The Purpose of BLEU Metric	20
3. Microsoft Translator	21
a. Definition of Microsoft Translator	21
b. How to Use Microsoft Translator	22
C. Theoretical Framework.....	25
CHAPTER III RESEARCH METHOD.....	26
A. Research Design	26
B. Variables of the Research	26
C. Population and Sample.....	26
D. Research Instruments	28
E. Procedure of Collection Data.....	28
F. Techniques of Data Analysis.....	28
a. The first step is to compute Precision scores for 1-grams to 4-grams.....	28
b. Geometric Average Precision Scores	29
c. Bleu Score.....	30
CHAPTER IV.....	28
A. Research Findings	28
B. Research Discussion	29
CHAPTER V CONCLUSIONS AND SUGGESSTIONS.....	55
A. Conclusion	55
B. Suggestions	56
BIBLIOGRAPHY	57
APPENDIX.....	59

LIST OF TABLES

Tabel 3.1 Students Population	27
Tabel 4.1. The Level of Accuracy Through Microsoft Translator.....	52



LIST OF FIGURES

Figure 2.1 Translation Process	15
Figure 2.2 Bleu Metric Evaluation Steps.....	18
Figure 3.1 Geometric Average Precision Formula.....	29
Figure 3.2 Brevity Penalty Formula	30
Figure 3.3 BLEU Score Formula	30



LIST OF PICTURES

Picture 2.1 Homepage of Microsoft Translator	22
Picture 2.2 Menu for Typing Translation	23
Picture 2.3 Language Option of Microsoft Translator	24



CHAPTER I

INTRODUCTION

A. Background

Translation has been used for many years to acquire knowledge and information on the results of writing in a local language or interaction with people from other cultures. This habit is still going on today. It is necessary for language users to understand that, given the large and varied number of languages in the world, they must always live in an environment where there are multiple languages. However, it is necessary to have a single language that sets itself apart from others in an environment. Martin (2018) observes the fact that human beings are limited in language skills and development makes this limitation a significant strategy for overcoming multilingual obstacles, because it is common practice among companies focused on adapting to today's lives. In addition, Peter Newmark (1991) defines that the act of translating as transferring the meaning of a stretch or a unit of language, the entire or a part of a text, from one language to another, possibly putting the problem where it belongs, the meaning of meaning rather than the meaning of equivalence, identity, similarity, likeness, sameness, correspondence and so on.

The demand of modern society for translation is a reason why companies, especially software firms, are competing to meet it. In the end, because of this need factor, we will finally see machine translation. Machine translation is software that uses algorithms from computers in translation or in other words that do the translation thoroughly is the system of the computer.

One of the machine translation (MT) applications is Microsoft Translator. Microsoft Translator is an application developed by a company called Microsoft, which specializes in translation. The ability to translate 65 languages around the World is Microsoft Translator's advantage. In addition, it supports 11 speech translation systems that are currently used in Microsoft Translator's Live Call feature, Skype Translation for Windows and the Microsoft Translator Apps for IOS and Android.

The importance of translation is that, by not changing the meaning or the idea of the language source, it must be natural. There are distinct languages in both English and Indonesia, making it certain that there is some kind of language difference. It is certainly not easy to make an accurate and acceptable translation from Indonesian to English due to its structure. In most cases, the translation performance is not good enough, so Machine Translation only used to find out the meaning of the source language, even though the results must be carefully checked for errors.

Now Microsoft Translator has evolved to a more sophisticated and extensive translation application. Microsoft Translator provides users with a wide range of new features to meet their needs. Nevertheless, because of the fact that most people continue to doubt the accuracy and completeness of translations made by this application, it is important to further study Microsoft Translator's translation capability in particular as regards linguistic aspects, precision, acceptance and readability.

In this research, researchers chose the BLEU (Bilingual Evaluation Understudy) metric to evaluate the performance of Microsoft Translator whether it is accurate and in accordance with the translator's assessment in translating a language. In addition, this research will be conducted at SMPN 3 Sungguminasa with the aim that researchers know the level of accuracy of BLEU metrics in assessing the performance of Microsoft Translator at the junior high school level whose level of English use is still relatively simple.

This research "*Using The BLEU Metric To Assess The Performance Of Microsoft Translator For English Translations*" will present about the research on accuracy in the results of translation that is translated by Microsoft Translator.

B. Problem Statement

Base on the explanation above, the problem statement in this research is:

Does Microsoft Translator's performance in translation have high accuracy after being assessed using BLEU metrics?

C. Objectives of the Research

The primary objective of this research is to conduct a thorough evaluation of the performance of Microsoft Translator specifically in the context of translating English language content. This assessment will utilize the BLEU metric, which is a widely recognized quantitative measure for assessing the quality of machine-generated translations. By employing this metric, the research aims to provide an objective analysis of the accuracy translations produced by Microsoft Translator. The findings from this study are intended to contribute valuable insights into the capabilities of Microsoft Translator and to facilitate a better understanding of its strengths and weaknesses in the field of machine translation.

D. Significance of the Research

In this study, the researcher hopes that the results of this research can be beneficial both theoretically and practically.

1. Theoretically

This research is expected to be beneficial in the field of education and also serve as additional information about machine translation, specifically Microsoft Translator, and how to use the BLEU metric to assess translation performance.

2. Practical

From this research is expected to facilitate its metrics to:

a. Teacher

Teachers can use this metric as one of the guidelines to assess the performance of machine translators. And it serves as a reference for teachers regarding the use of the BLEU metric.

b. Students

The use of the BLEU metric in research is expected to enhance insights in English language translation.

c. Researcher

Researchers want to provide information and insights about translation machines, translation, and the methods that can be taken to assess the performance of a machine or translator application.

CHAPTER II

RELATED LITERATURE REVIEW

This chapter discusses some findings from previous related research, some related ideas, translation skills and translation concepts.

A. Previous Related Research Findings

There were some findings on machine translation performance but researchers only took five for reference in this research. However, previous research was not all specific to Microsoft Translator's performance for Indonesian translation. So researchers used a combination of results from Microsoft Translator and Google Translate, even so, broadly speaking, previous studies had relatively similar discussions, namely about machine translation and BLEU Metric performance.

Here some previous researches those are relevant to this thesis:

1. The first research by Istiqomah Yudiarti (2019) on "The Analysis of Microsoft Translator Quality in Translating Complex Sentence Indonesia into English of the Text". Microsoft Translator quality in translation of complex sentence is the focus of this research. In order to understand the quality of translations, a researcher should concentrate on accuracy, readability and acceptability. The research showed that the translation of complex sentence into English is inaccurate, less readable and out of date. Therefore, researchers recommend that Microsoft Translator results need to always analyze by the users of this application.

2. The second research was conducted by Mia Rahmannia (2019) on " A Study of Google Translate Translations: An Error Analysis of Indonesian to English Texts ". This research aims at evaluating Google Translate results in the translation of Indonesian news. Google translate has not been able to provide an accurate and appropriate translation, according to the results of this research.
3. The third research was conducted by Deri Herdawan (2020) on "An Analysis on Indonesian- English Abstract Translation by Google Translate ". This research focuses on translation method. The results of this research show that literal translation is much more effective than the translation of each word, although weaknesses such as distortion of meaning and accuracy are still inevitable, so users of this technology must understand the meaning of the source language to be translated.
4. The fourth research by Tira Nur Fitria (2021) on "Analysis on Clarity and Correctness of Google Translate in Translating an Indonesian Article into English". Clarity and Correctness of Google Translate is the focus of this research. The results of this research show that for the clarity aspect Google Translate cannot be the main reference at all. Furthermore, the accuracy aspect that uses writing guidelines by considering grammar, punctuation, and spelling, the results still show a lot of errors. Therefore, although the presence of a translation machine is very helpful to shorten the time, there are still many things that need to be addressed, especially in

the grammar aspect.

5. The fifth research was conducted by Sumiati(2022) on " The Analysis of Google Translate Accuracy in Translating Procedural and Narrative Text". This research aims at evaluating Google Translate results in the translation of Procedural and Narrative Text. The results of this research show a high percentage of accuracy in both the procedure and narrative text. That way it can be interpreted that Google Translate is quite trustworthy for simple translations both in the form of procedures and narratives although it still needs a little improvement.

From the explanation above, there are various ways and results from researchers in conducting research on the quality of a machine or translator application. The distinguishing aspect of this study from previous studies is the use of BLEU metrics that were not previously used by previous researchers. In simple terms, this metric is indeed a metric that is devoted to assessing the performance of the translator application which in this case is Microsoft Translator.

B. Some Related Ideas

1. Concept of Translation

a. Definition of Translation

There are several definitions of translation. Translating is reproducing the source language naturally by considering two things: the first is meaning, then the second is style.

In addition, Peter Newmark (1991) defines that translating is the act of transferring a stretching meaning or unit of language, either partially or

completely from one language to another, perhaps putting the problem in its place, meaning rather than meaning equality, identity, similarity, correspondence and so on.

Translation is the activity of replacing a representation of a text in one language with a text representation equivalent to another language or target language. In a different view, Translation is a process that involves negotiating meaning between the producer and receiver of the text.

As a science, translation includes knowledge and assessment of the facts of the language it describes. As a skill, translation contains the appropriate language and understandable usage. As an art, translation distinguishes the quality of writing between good and bad, and involves an innovative, intuitive, and inspired level. And finally, seeing translation as a matter of taste means that the translation results between one translator and another will differ depending on their preferences.

From the definition above, the translation has the same term, namely substitution based on the concept of equality. Substitution refers to a change of a word in the source language that when interpreted can later be accepted in the target language. For the term equivalent is the main idea of the translation results have the same level and designation. In addition did not use the term "equivalent" as a definition but he said that equivalent can be interpreted as a message in other words the main goal is that in the end the message from the author can still be conveyed properly and correctly even though it is a translation.

b. Performance Assessment of Translation

Performance Assessment in translation covers three aspects; accuracy, acceptance, and readability, but in this research the assessment was only focused on aspects of accuracy. Nababan (1999) stated that the assessment of the translation is necessary because it will give importance to the translator, publisher, and target reader.

This study evaluated the performance of Microsoft Translator. Translation performance was measured using matrix assessments from Papineni, Roukos, Ward and Zhu (2002). This metric used a comparison between human translation results and machine translation results whose main purpose is to assess the performance of machine translation.

Accuracy is a term used in translation evaluation refers to the degree of correspondence between the translated and original text. Accuracy refers to the how accurate the meaning are transferred in target text. As stated above in chapter I that translation is a transfer meaning process, it can be said accurate if the message from the source text is exactly transferred in the target text.

Nababan (1999) states his opinion about accuracy as an evaluation of the accuracy of the translation at the sentential level is intended to find out whether the content of the source language sentences are accurately rendered into the target language sentences.

c. Translation Ability

Translation is a tool for communication through which users of the English language interact with translators. Communication strategy has also

proved to be very effective for second language students. Translation, as defined in Bell (1991:5), is an expression of another language, target language or receptor language. In addition, the material or text transferred is also rendered in another language. Similarly, in Nababan (1999:19) Catford points out that translation means to restore and reword textual material originating in the language of origin with a similar text from the receptor language. In translating, the texts must be thoroughly examined in order to find translation results that are equivalent to their source language.

Similarly, Larson in Djuharie (2004: 12) states that translation is the process of studying the lexical and grammatical structure of the original language or source language by analyzing with the aim of completing its meaning, then rearranging the same meaning using the appropriate lexical and grammatical structure in the form of receptor language or target language.

The definition of translation can be categorized into three types: intralingual, interlingual, and intersemiotic translation. The first term indicates an attempt to express an idea or thought in the same language. This is referred to in English as paraphrasing. The second term is translating thoughts or ideas from one language to another. Then, the last term is translating thoughts or ideas from verbal to non-verbal language (Jakobson in Rokhman, 2008: 9).

Crystal in Rokhman (2008:10) also says that in translation there are three stages of translation, each of which has a different focus: word for word, literal, and free translation. The first stage is called verbatim. This

translation model translates text from the source language to the target language by looking for grammatical similarities in each word in the sentence. The second stage is literal translation. At this stage, the translation is focused on the meaning of the words, phrases, clauses and sentences being translated. Then, the final stage is free translation. At this stage, the translator does not focus too much on unimportant linguistic structures because the focus is on the equivalence of meaning.

As explained above, when a language meaning is changed from the source language to that of its target language, it can be accepted that translation ability lies in proficiency, competence and intelligence. That means that the meaning of the source language must be identical, even when the grammatical structure of a sentence changes. Therefore, the ability to translate is one of the abilities to transfer ideas or thoughts from one language to another, meaning from the source language to the target language.

d. Translation Type

There are several types of translation method in translating a text. It is proposed by Newmark (2004:18). The types are as follows:

1. Word for Word

The term "word for word" translation is a particular type of translation that remains firmly bound to the words used in the sentence. This translation is a generic type of translation that can only be translated directly from source language to target language text and does not change its order as it relates to destination language.

2. Literal Translation

This type of translation might first be done like word for word translation, but then the translator makes changes the order or structure of the target language. For example, “**The thief was sent to the prison**” the meaning “*Pencuri itu dipenjarakan*(Literal)”

3. Loyal Translation

In order to establish the correct context of a text in its original form, which is limited by grammatical structure at source, an accurate translation or reliable translation must be carried out. In this translation, a vocabulary has been transferred and lexical level is retained in order to ensure that the translation actually reflects the intent of the source language text but also so far as possible retain or adhere to its content. For example, “**Born without arms, he was sent to special schools**” the meaning “*Lahir tanpa lengan, dia dikirim ke sekolah khusus (harfiah)*” or “*Karena dilahirkan tanpa lengan, dia bersekolah di sekolah khusus (Bukan 'karena lahir...disekolahkan...')*”

4. Semantic Translation

The semantic translation retains the aesthetic value of text from a source language and adapts its meaning when there are no repeat words, which is why it differs as opposed to loyal translations or faithful translation. Less important cultural words shall not be translated into Cultural Terms in this translation, but rather are replaced by functional culturally neutral terms.

5. Adaptation

This is the most free of translation form and it is mainly used in the translation of drama or plays (comedies) and poetry; the themes, characters, plot are usually retained, but the source language cultural is changed to the target language or receptor language cultural.

6. Free Translation

The issue without the manner or content of its original form is produced by this type of translation. This rather same as longer paraphrase than the original material which is also called 'intralingua translation', it is often wordy, excessive, and even not a translation at all.

7. Idiomatic Translation

It is a type that produces an initial message, but it is preference and use of more colloquialisms or idioms in the source language changes the sense of meaning.

8. Communicative Translation

In such a way that the content and language can be understood by readers, communicable translations aim at diverting from the specific contextual meaning of source texts so as to make them easy to understand. That way, a reader can understand it.

Based on explanation above, there is one line of similarity that is translation process consists of three parts; word by word, literal, and free. Translation process above is useful to produce the precise understanding of meaning so that translation result has the similarity of message, impression, nuance, and context. Translation always begins from understanding word

by word and followed by meaning of word in analyze of grammatical.

e. Factor of Translation

In translating a text, there are some influencing factors of translation. According to Rokhman (2008:11) in translating a text, there are factors that influence the translation process that include contextual, textual, and translator factor. This factor is related with the text production context that include language history, text writer, the culture text places is produced, the region text place is produced, text social variation, and topic of text. This element can be called contextual factor. Then, textual factor is formed by elements likes; word, phrase, clause, sentence, punctuation, and grammatical text.

Translating process cannot be separated from the element of translator itself. This condition is affected by some factors such as: competency of the translator, their perception, and the instrument which is used by them in translating process.

f. Process of Translation

In translating, it should be known the process of translation before starting to translate. Nababan (1999:24) states that Process of translation is an activity system in translation activity. It can be drawn as picture below:

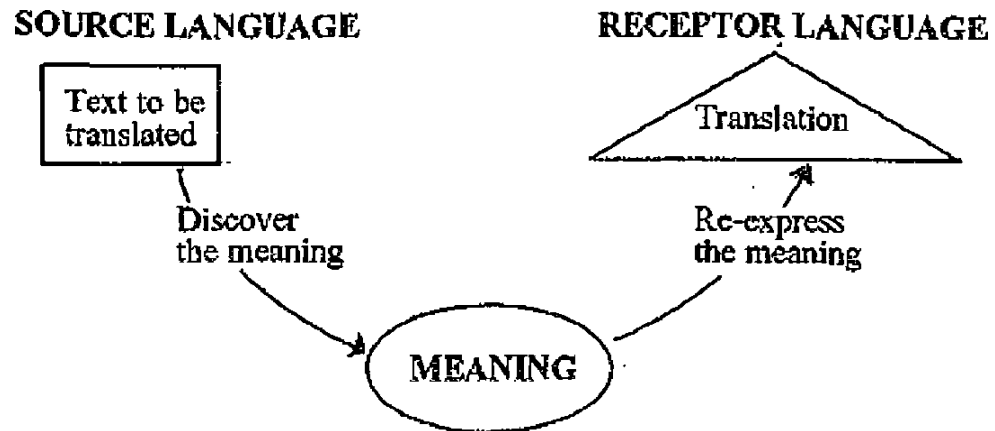


Figure 2.1 Translation Process

He also divides translation process into three main steps as follows:

1. Analyzing the Source Language (SL)

To translate the source language into the target language, the translator has to read the whole text of source language by reading and understanding the content of message of the text in order to know what the writer or author wants to convey so that the authenticity of the source language message is still maintained or original when it is already translated into the target language.

2. Transferring the Message

The next step is transferring the message. In this transfer phase, the material of the source language that has been analyzed before has been analyzed and traced in the first stage transferred in the mind of the translator from the source language into the target language. At this stage this stage the work of the brain operates in order to find the originality and equivalency of some information understood on the first stage.

3. Restructuring

The last stage of translation is restructuring, it means that the translator rearranges the target language text based on the intent of the author of the source language text so that the result of the translation has an appropriate and good readability, style, and language rules or grammatical structure that are appropriate and acceptable within the target language. If there is an error or mistake of translation, the translator can check and revise by comparing and matching the content of message between those two languages.

According to Suryawinata in Nababan, (1999:25), there are three stages of translation process which should be passed by the students. Firstly is analysis. In this stages, the student should analyze the text in the form of source language text. When they have understood, they should transfer the message text from source language text into target language text or receptor language. In this step, the students should translate it into English. If their mastery in simple present tense is high, probably they will be easy to translate the text. The last step is restructuring. In this step, the students should evaluate and revise what they have been done before. In this step, it can be said that the text that has been translated by them will be evaluated by the process which is called as rereading, and then, when this process has done, the students will know where the part of their translation that should be revised. All of the processes have proposed to increase their translation result. It means that, to get better translation result, the students should arrange the structure through the process of restructuring.

2. The BLEU Metric

a. Definition of BLEU Metric

BLEU (bilingual evaluation understudy) is an algorithm that aims to evaluate the quality of text that has been translated by a machine translator from one natural language to another. Quality is considered as a correspondence between machine translation and human translation: “the closer the machine translation is to a professional human translation, the better output the users will get”, this is the main idea of BLEU.

BLEU has been one of the earliest metrics to claim a high correlation between computer translators' and human ratings, which makes it one of the most commonly used automated and inexpensive indicators.

In order to benchmark the translation against a set of good quality reference translations, an assessment score is generated for each segment of the translation that usually refers to one sentence. To arrive at an overall assessment of the translation's quality, a score is then averaged across the entire corpus. Consideration shall not be given to clarity or grammatical correctness.

The BLEU's outputs are always a number from 0 to 1. This indicates that the proposed text is equivalent to a reference text, which values close to 1 are indicative of more comparable texts. A rating of 1 will be given to some translations made by humans, as this indicates that the applicant is similar to a reference translation. Therefore, it is not necessary to obtain a score of 1 for this purpose. Since there are more opportunities to match, adding additional reference translations increases the BLEU score.

b. The concept of BLEU Metric

The idea of the BLEU method is to compare the n-gram translation output of an MT (candidate) with other n-gram translations made by humans and calculate the number of matching n-gram. The more matches, the better the candidate's translation and the score generated from the evaluation with the BLEU method is higher. Further, the concept of information extraction, in particular with regard to weighting techniques, is also being developed using the BLEU method.

The test is carried out by looking at a correlation or relationship between the score obtained and human point of view. The test results have shown a greater relationship between human assessment and the calculation of the BLEU score with factorization, than is found in the basic method.

c. Steps of BLEU Metric

BLEU measures the modified n-gram precision score between automatic translation and reference translation and uses a constant called brevity penalty (Papineni, 2002).

Figure 2.2 BLEU Metric Evaluation Steps

$$BP_{BLEU} = \begin{cases} 1 & \text{if } c > r \\ e^{(1-r/c)} & \text{if } c \leq r \end{cases}$$

$$P_n = \frac{\sum_{C \in \text{Candidates}} \sum_{n\text{-gram} \in C} \text{Count}_{\text{ref}}(n\text{-gram})}{\sum_{C' \in \text{Candidates}} \sum_{n\text{-gram}' \in C'} \text{Count}(n\text{-gram}')}$$

$$BLEU = BP \cdot \exp \left(\sum_{n=1}^N w_n \log P_n \right)$$

When $w_n = 1/N$.

The BP symbol is the brevity penalty, c is the number of words from the automatic translation, r is the number of words from the reference, and p_n is the modified precision score. The w_n value is $1/N$. The standard N value for BLEU is 4, because the precision value of BLEU is generally calculated to 4-grams only. The p_n symbol is obtained from the number of n -grams in the translation that matches the reference divided by the number of n -grams in the translation.

For example, if a machine produces a translation:

Indonesia akan melakukan pesta pemilihan with reference sentences *rakyat*

Indonesia akan melakukan pesta demokrasi then the assessment with the

BLEU method is as follows.

The number of words in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 6$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-6/5)} = 0.8187$

From the translated sentences and references, there are five unigrams in the translated sentence (*Indonesia, akan, melakukan, pesta, pemilihan*) and four unigrams that are the same as the reference (*Indonesia, akan, melakukan, pesta*), so that:

$$\log p_1 = \log (4/5) = -0.0969$$

There are four 2-grams in the translated sentence and three 2-grams equal to thereference, so that:

$$\log p_2 = \log (3/4) = -0.1249$$

In the same way:

$$\log p_3 = \log (2/3) = -0.1760$$

$$\log p_4 = \log (1/2) = -0.3010$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU is:

$$\begin{aligned} \text{BLEU} &= 0.8187 + (1/4 ((-0,0969) + (-0,1249) + (-0,1760) + (-0,3010))) \\ &= 0.644 = 64,4 \% \end{aligned}$$

e. Disadvantages and Advantages of BLEU Metric

As a metric that has collaborated with the digital world, BLEU metrics have several advantages such as fast, easy to understand, correspondent, and because of its wide use so that users can compare the results with results from other users.

However, BLEU metrics are also not free from weaknesses. Some weaknesses that are often found by users of this metric are not paying attention to the meaning of sentences, only looking for words that are same without paying attention to tenses, not paying attention to important words in sentences, and not paying attention to the order of sentences translated.

f. The Purpose of BLEU Metric

The main purpose of the BLEU metric is to compare human translations and machine translations using n-gram precision. The way this metric works is by comparing starting from unigrams, bigrams, trigrams, and four-grams. With these four types of comparisons, it is hoped that this metric can evaluate not only from each word of the translation but can consider the sentence order as well so that the final analysis results of this

metric become results that can be used as a reference to assess the performance of a machine translator.

3. Microsoft Translator

a. Definition of Microsoft Translator

Microsoft Translator is a multilingual machine translation service provided by Microsoft. Microsoft Translator is part of Microsoft Cognitive Services and is integrated into various consumer, developer, and enterprise products, including Bing, Microsoft Office, SharePoint, Microsoft Edge, Microsoft Lync, Yammer, Skype Translator, Visual Studio, as well as the Microsoft Translator app for Windows, Windows Phone, iPhone, Apple Watch, and Android phones and Android Wear.

Microsoft Translator also offers text and speech translation services through its cloud service for businesses. The text translation service via the Translator Text API includes a free tier that supports two million characters per month, up to a paid tier that supports billions of characters per month. Speech translation through Microsoft Speech services is offered based on audio streaming time.

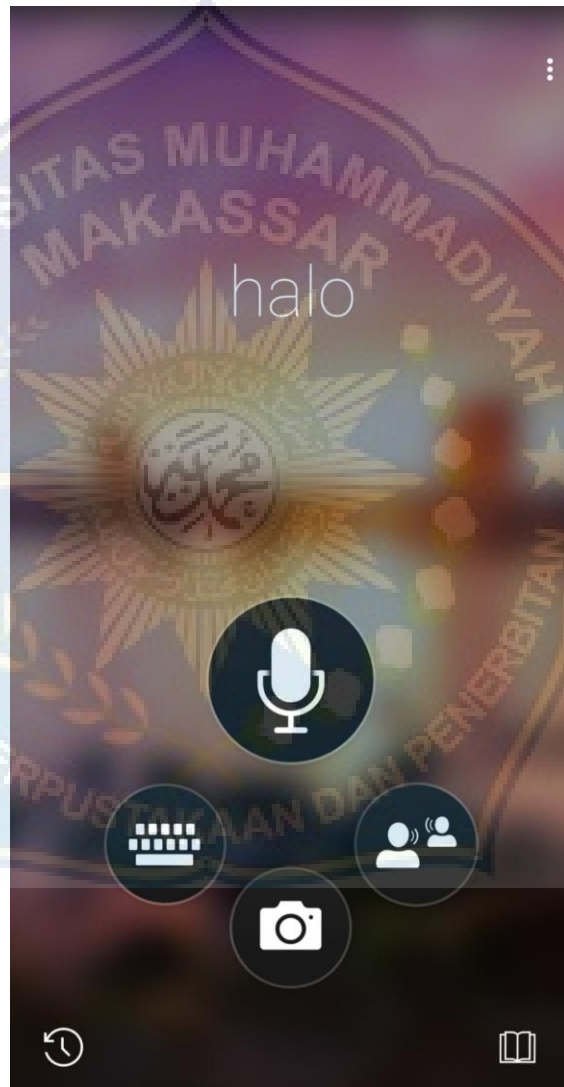
The service supports text translation between many languages and language varieties. It also supports several speech translation systems that currently power the Microsoft Translator live conversation feature, Skype Translator, and Skype for Windows Desktop, and the Microsoft Translator Apps for iOS and Android.

b. How to Use Microsoft Translator

The following is how to operate the Microsoft Translator application specifically for translation:

1. First, download the application from the Play Store.
2. Open the application, and the home page will appear.

Picture 2.1 Homepage of Microsoft Translator



3. After that, press the keyboard-shaped icon to perform translation in the form of input typing.

Picture 2.2 Menu for Typing Translation



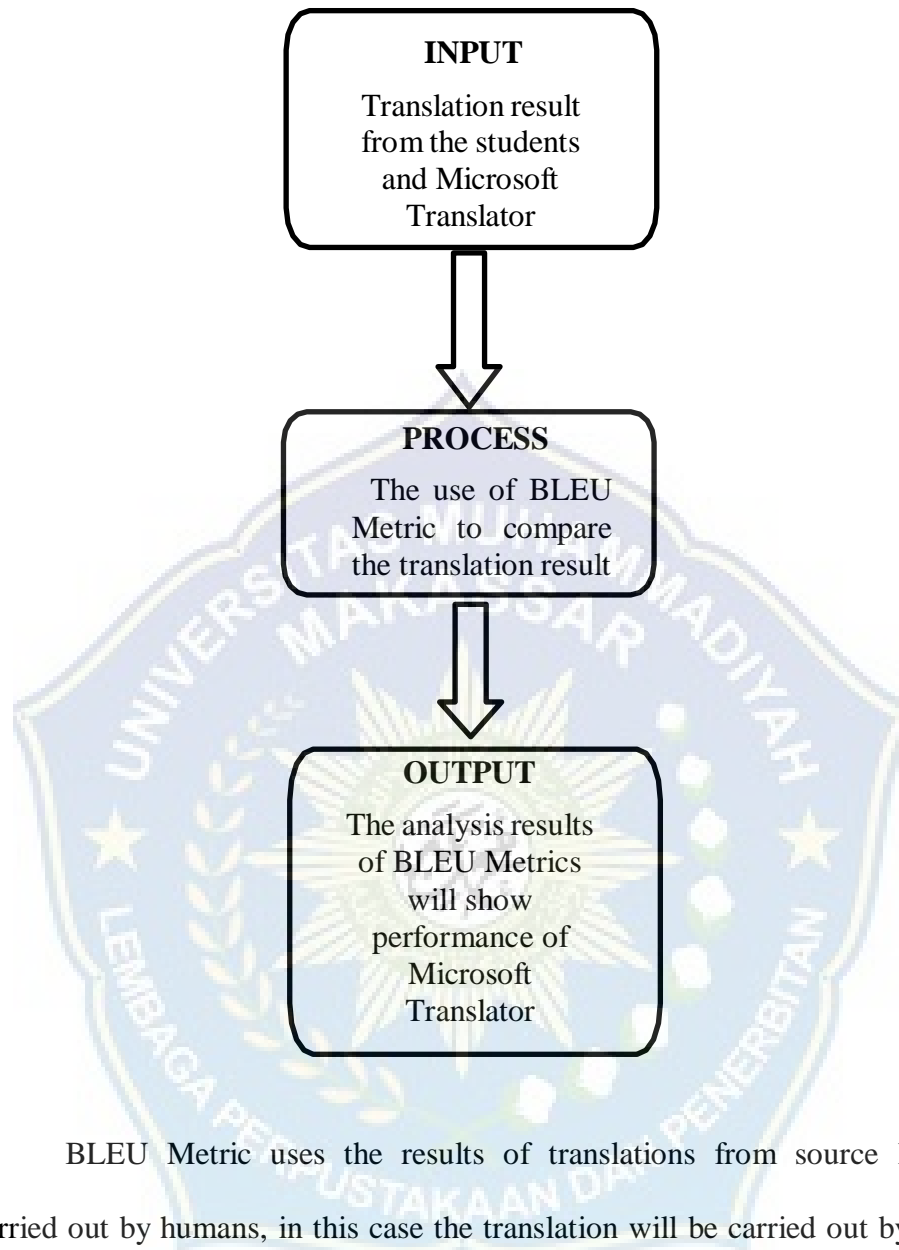
4. The final step is to select the source language and target language that you desire by pressing the language options menu at the bottom of your screen.

Picture 2.3 Language Option of Microsoft Translator



The sequence of steps outlined above constitutes the requisite methodology that users are expected to adhere to when they wish to execute a translation process involving the input of data in a typed format. This systematic approach ensures that users can effectively navigate through the necessary processes to achieve accurate and reliable translations. By following these prescribed procedures, individuals can input the desired textual information in a clear and organized manner, thereby facilitating the translation outcome they seek. It is essential for users to familiarize themselves with each step, as this knowledge will enable them to optimize their translation efforts and attain the desired results efficiently.

C. Theoretical Framework



BLEU Metric uses the results of translations from source languages carried out by humans, in this case the translation will be carried out by students at SMPN 3 Sungguminasa. The results of the students' translations will then be compared with the translation results from the Microsoft Translator application using the BLEU metrics. From the previous process, the results of BLEU metric analysis will be obtained which will show the level of match between translations made by humans and translations made by machine translators. So in the end the researcher can find out how good the performance of Microsoft Translator.



CHAPTER III

RESEARCH METHOD

This chapter discusses research design, research variables, population and sample, research instruments, information collection procedures, and information techniques analysis.

A. Research Design

Research design is used to analyze and identify the subjects of this study. In order for the research to proceed correctly, a research design is necessary. This research design is a descriptive quantitative method because the data is presented in numerical and descriptive form. Sugiyono (1994) said Descriptive research is conducted to determine the values of independent variables, either one or more, without making comparisons or linking them to other variables.

B. Variables of the Research

There are two variables: independent and dependent variables. In this research, the dependent variable is Microsoft Translator performance, and the independent variable is the use of BLEU metric.

C. Population and Sample

1. Population

The population in this research was grade IX students at SMPN 3 Sungguminasa. Grade IX students at SMPN 3 Sungguminasa consist of eleven classes with a total of 338 students. Of the total students, there are 163 male students and 175 female students.

Table 3.1 Students Population

NU	CLASS	Male	Female	Total
1	IX A	12	19	31
2	IX B	14	15	29
3	IX C	13	17	30
4	IX D	17	13	30
5	IX E	20	11	31
6	IX F	16	15	31
7	IX G	16	17	33
8	IX H	12	18	30
9	IX I	13	18	31
10	IX J	15	16	31
11	IX K	15	16	31
Total		163	175	338

Adaptive From: TU SMPN 3 Sungguminasa

2. Sample

The sampling technique in this research used non-probability sampling, namely purposive sampling. In this process, researchers does observations by asked the teacher, the results of this observation show that class IX A students have more abilities than other classes so that researchers make class IX A as a source for sampling.

D. Research Instruments

The research instrument in this research is the translation test. The translation test in this research is translating Indonesian text into English. Students in this research only act as translators while providing opinions, because the main purpose of this research is to find out the performance of Microsoft Translator.

E. Procedure of Collection Data

Data collection was one of the important things in research that can determine the results of the research, as follows:

The process collecting data in this research as follows:

1. The researcher gave translation task to the students.
2. The researcher used Microsoft Translator to translate the same sentences.
3. Researchers used the BLEU metric to evaluate translations from students and translations from Microsoft Translator.

F. Techniques of Data Analysis

After the information is collected, the next research step is to analyze the information. by using the following procedure:

- a. **The first step is to compute Precision scores for 1-grams through 4-grams.**

1. Precision 1-gram

Precision 1-gram = Number of correct predicted 1-grams / Number of total predicted 1-grams.

2. Precision 2-gram

Precision 2-gram = Number of correct predicted 2-grams / Number of total predicted 2-grams.

3. Precision 3-gram

Precision 3-gram = Number of correct predicted 3-grams / Number of total predicted 3-grams.

4. Precision 4-gram

Precision 4-gram = Number of correct predicted 4-grams / Number of total predicted 4-grams.

b. Geometric Average Precision Scores

Next, we combine these Precision Scores using the formula below. This can be computed for different values of N and using different weight values. Typically, we use $N = 4$ and uniform weights $w_n = N / 4$

Figure 3.1 Geometric Average Precision Formula

$$\begin{aligned}
 \text{Geometric Average Precision (N)} &= \exp\left(\sum_{n=1}^N w_n \log p_n\right) \\
 &= \prod_{n=1}^N p_n^{w_n} \\
 &= (p_1)^{\frac{1}{4}} \cdot (p_2)^{\frac{1}{4}} \cdot (p_3)^{\frac{1}{4}} \cdot (p_4)^{\frac{1}{4}}
 \end{aligned}$$

c. Brevity Penalty

Figure 3.2 Brevity Penalty Formula

$$\text{Brevity Penalty} = \begin{cases} 1, & \text{if } c > r \\ e^{(1-\tau/c)}, & \text{if } c \leq r \end{cases}$$

c is predicted length = number of words in the predicted sentence and r is target length = number of words in the target sentence

d. Bleu Score

Finally, to calculate the Bleu Score, the researcher summing the Brevity Penalty with the Geometric Average of the Precision Scores.

Figure 3.3 BLEU Score Formula

$$\text{Bleu}(N) = \text{Brevity Penalty} \cdot \text{Geometric Average Precision Scores}(N)$$

Bleu Score can be computed for different values of N . Typically, we use $N=4$.

- BLEU-1 uses the unigram Precision score
- BLEU-2 uses the geometric average of unigram and bigram precision
- BLEU-3 uses the geometric average of unigram, bigram, and trigram precision
- and so on.

CHAPTER IV

RESEARCH FINDINGS AND DISCUSSIONS

In this chapter, the problem formulation in Chapter One about the quality of Microsoft Translator will be answered by analyzing data from checking research instruments. Based on the score, there are some problems that arise in sentence translation through Microsoft Translator. The problem has to do with accuracy.

A. Research Findings

The evaluation of the data acquired and analyzed through the application of the BLEU Metric reveals significant insights regarding the efficacy of Microsoft Translator within the domain of translation. This assessment highlights various aspects related to its accuracy, shedding light on the tool's performance in translating different languages and contexts.

The findings derived from this data collection present a comprehensive overview of Microsoft Translator's capabilities and limitations, illustrating how effectively it can convey meaning and nuance between languages. In the following sections, a detailed description of these findings will be provided, emphasizing the implications for users and stakeholders who rely on translation technology for various purposes.

The data points to specific trends and patterns that emerge from the assessments, allowing for a nuanced understanding of the tool's operational strengths and weaknesses in translation tasks. Consequently, this analysis contributes to the growing body of knowledge surrounding machine translation, offering valuable insights that can inform future developments and applications in the field.

Based on data analysis, it can be seen that there are findings related to accuracy in the use of Microsoft Translator.

1) *My friend lives in Gowa*

with reference sentences *My friend lives in Gowa*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 5$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-5/5)}$

$= 1$

From the translated sentences and references, there are five unigrams in the translated sentence (*My, friend, lives, in, Gowa*) and five unigrams that are the same as the reference (*My, friend, lives, in, Gowa*), so that: $\log p_1 = \log (5/5)$

$= 0$

There are four 2-grams in the translated sentence and four 2-grams equal to thereference, so that:

$\log p_2 = \log (4/4)$

$= 0$

In the same way:

$\log p_3 = \log (3/3)$

$= 0$

$\log p_4 = \log (2/2)$

$= 0$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is:

$BLEU = 1 + (1/4 ((0+ 0+ 0+ 0))$

$= 1$

$= 100\%$

2). *Chiko is a cat*

with reference sentences *Chiko is a cat*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-4/4)}$

$= 1$

From the translated sentences and references, there are four unigrams in the translated sentence (*Chiko, is, a, cat*) and four unigrams that are the same as the reference (*Chiko, is, a, cat*), so that:

$\log p_1 = \log (4/4)$

$= 0$

There are three 2-grams in the translated sentence and three 2-grams equal to thereference, so that:

$\log p_2 = \log (3/3)$

$= 0$

In the same way: \log

$p_3 = \log (2/2)$

$= 0$

$\log p_4 = \log (1/1)$

$= 0$

Since $w_n = \frac{1}{4} (1/N)$, the final value of the BLEU of equation (30) is: $BLEU =$

$1 + (\frac{1}{4} ((0+ 0+ 0+ 0))$

$= 1$

$= 100\%$

3). *I read books*

with reference sentences *I am reading a book*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 3$.

Number of words in the reference sentence $r = 5$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-5/3)}$

$$= 0,5134$$

From the translated sentences and references, there are three unigrams in the translated sentence (*I, read, books*) and five unigrams that are the same as the reference (*I, am, reading, a, book*), so that:

$$\log p_1 = \log (1/3)$$

$$= -0,4771$$

There are two 2-grams in the translated sentence and zero 2-grams equal to thereference, so that:

$$\log p_2 = \log (0/2)$$

$$= 0$$

$$\log p_3 = \log (0/1)$$

$$= 0$$

Since $w_n = 1/3 (1/N)$, the final value of the BLEU is:

$$BLEU = 0,5134 + (1/3 ((-0,4771) + 0 + 0 + 0))$$

$$= 0,3543$$

$$= 35,43\%$$

4) *She is so beautiful*

with reference sentences *She is very beautiful*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-4/4)}$

= 1

From the translated sentences and references, there are four unigrams in the translated sentence (*She, Is, so, beautiful*) and four unigrams that are the same as the reference (*She, Is, very, beautiful*), so that:

$$\log p_1 = \log (3/4)$$

$$= -0,1249$$

There are three 2-grams in the translated sentence and one 2-grams equal to thereference, so that:

$$= -0,4771$$

In the same way:

$$\log p_3 = \log (0/2)$$

$$= 0$$

$$\log p_4 = \log (0/1)$$

$$= 0$$

Since $w_n = 1/3 (1/N)$, the final value of the BLEU is:

$$\text{BLEU} = 1 + (1/4 ((-0,1249)+(-0,4771)+ 0+ 0))$$

$$= 0,9119$$

$$= 91,19\%$$

5) *My mother is a teacher*

with reference sentences *My mother is a teacher*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 5$.

since $c \leq r$, then $\text{BP BLEU} = e^{(1-r/c)}$, so $\text{BP BLEU} = e^{(1-5/5)}$

= 1

From the translated sentences and references, there are five unigrams in the translated sentence (*My, mother, is, a, teacher*) and five unigrams that are the same as the reference (*My, mother, is, a, teacher*), so that:

$$= 0$$

There are four 2-grams in the translated sentence and four 2-grams equal to the reference, so that:

$$\log p_2 = \log (4/4)$$

$$= 0$$

In the same way:

$$\log p_3 = \log (3/3)$$

$$= 0$$

$$\log p_4 = \log (2/2)$$

$$= 0$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 ((0+ 0+ 0+ 0))$$

$$= 1$$

$$= 100\%$$

6) *She likes fried rice*

with reference sentences *He likes fried rice*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

$$\text{since } c \leq r, \text{ then } \text{BP BLEU} = e^{(1-r/c)}, \text{ so } \text{BP BLEU} = e^{(1-4/4)}$$

$$= 1$$

From the translated sentences and references, there are four unigrams in the translated sentence (*She, likes, fried, rice*) and four unigrams that are the same as the reference (*He, likes, fried, rice*), so that:

$$\log p_1 = \log (3/4)$$

$$= -0,1249$$

There are three 2-grams in the translated sentence and two 2-grams equal to the reference, so that:

$$\log p_2 = \log (2/3)$$

$$= -0,1760$$

In the same way:

$$\log p_3 = \log (1/2)$$

$$= -0,3010$$

$$\log p_4 = \log (0/1)$$

$$= 0$$

Since $w_n = 1/3 (1/N)$, the final value of the BLEU is: BLEU

$$= 1 + (1/4 ((-0,1249) + (-0,1760) + (-0,3010) + 0))$$

$$= 0,8495$$

$$= 84,95\%$$

7) *Ical loves to play guitar*

with reference sentences *Ical likes to play guitar*

then the assessment with the BLEU method is as follows. The number of

words in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 5$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-5/5)}$

$= 1$

From the translated sentences and references, there are five unigrams in the translated sentence (*Ical, loves, to, play, guitar*) and four unigrams that are the same as the reference (*Ical, likes, to, play, guitar*), so that: $(Ical, likes, to, play, guitar) \log p_1 = \log$

$(4/5)$

$= -0,0969$

There are four 2-grams in the translated sentence and two 2-grams equal to thereference, so that:

$\log p_2 = \log (2/4)$

$= -0,3010$

In the same way:

$\log p_3 = \log (1/3)$

$= -0,4771$

$\log p_4 = \log (0/2)$

= 0

Since $w_n = \frac{1}{4}$ ($1/N$), the final value of the BLEU of equation (30) is:
 $BLEU = 1 + (\frac{1}{4} ((-0,0969) + (-0,3010) + (-0,4771) + 0))$

= 0.7812

= 78,12%

8) *They are of the same class*

with reference sentences *They are of the same class*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 6$.

Number of words in the reference sentence $r = 6$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-5/5)}$

= 1

From the translated sentences and references, there are six unigrams in the translated sentence (*They, are, of, the, same, class*) and six unigrams that are the same as the reference, so that: (*They, are, of, the, same, class*) $\log p_1 = \log$

(6/6)

= 0

There are four 2-grams in the translated sentence and two 2-grams equal to thereference, so that:

$\log p_2 = \log (5/5)$

= 0

In the same way: log

$$p_3 = \log (4/4)$$

$$= 0$$

$$\log p_4 = \log (3/3)$$

$$= 0$$

Since $w_n = 1/4$ ($1/N$), the final value of the BLEU of equation (30) is: BLEU =

$$1 + (1/4 \cdot 0 + 0 + 0 + 0)$$

$$= 1$$

$$= 100\%$$

9) *My bag is black*

with reference sentences *My bag is black*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

since $c \leq r$, then $BP_{BLEU} = e^{(1-r/c)}$, so $BP_{BLEU} = e^{(1-4/4)}$

$$= 1$$

From the translated sentences and references, there are four unigrams in the translated sentence (*My bag is black*) and four unigrams that are the same as the reference, so that: (*My bag is black*)

$$\log p_1 = \log (4/4)$$

$$= 0$$

There are three 2-grams in the translated sentence and three 2-grams equal to thereference, so that:

$$\begin{aligned} \log p_2 &= \log (3/3) \\ &= 0 \end{aligned}$$

In the same way:

$$\begin{aligned} \log p_3 &= \log (2/2) \\ &= 0 \end{aligned}$$

$$\begin{aligned} \log p_4 &= \log (1/1) \\ &= 0 \end{aligned}$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is: BLEU =

$$\begin{aligned} &1 + (1/4 (0+0+0+ 0) \\ &= 1 \\ &= 100\% \end{aligned}$$

10) *I eat 3 times a day*

with reference sentences *I eat three times a day*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 6$.

Number of words in the reference sentence $r = 6$.

since $c \leq r$, then BP BLEU = $e^{(1-r/c)}$, so BP BLEU = $e^{(1-6/6)}$

$$= 1$$

From the translated sentences and references, there are five unigrams in the translated sentence (*I eat 3 times a day*) and six unigrams that are the same as the reference, so that: (*I eat three times a day*)

$$\log p_1 = \log (5/6)$$

$$= -0,0791$$

There are five 2-grams in the translated sentence and three 2-grams equal to the reference, so that:

$$\log p_2 = \log (3/5)$$

$$= -0,2218$$

In the same way:

$$\log p_3 = \log (2/4)$$

$$= -0,3010$$

$$\log p_4 = \log (1/3)$$

$$= -0,4771$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 ((-0,0791) + (-0,2218) + (-0,3010) + (-0,4771))$$

$$= 0.7302$$

$$= 73,02\%$$

11) *I am a doctor*

with reference sentences *I am a doctor*

then the assessment with the BLEU method is as follows. The number of words

in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

since $c \leq r$, then $\text{BP BLEU} = e^{(1-r/c)}$, so $\text{BP BLEU} = e^{(1-4/4)}$

$= 1$

From the translated sentences and references, there are four unigrams in the translated sentence (*I am a doctor*) and four unigrams that are the same

as the reference, so that: (*I am a doctor*)

$$\log p_1 = \log (4/4)$$

$= 0$

There are three 2-grams in the translated sentence and three 2-grams equal

to the reference, so that:

$$\log p_2 = \log (3/3)$$

$= 0$

In the same way:

$$\log p_3 = \log (2/2)$$

$= 0$

$$\log p_4 = \log (1/1)$$

$= 0$

Since $w_n = 1/4$ ($1/N$), the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 (0+0+0+0))$$

$= 1$

= 100%

12) *Rabbit eat vegetables*

with reference sentences *Rabbit eat vegetables*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 3$.

Number of words in the reference sentence $r = 3$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-3/3)}$

= 1

From the translated sentences and references, there are five unigrams in the translated sentence (*Rabbit eat vegetables*) and four unigrams that are the same as the reference (*Rabbit eat vegetables*), so that:

$\log p_1 = \log (3/3)$

= 0

There are four 2-grams in the translated sentence and two 2-grams equal to the reference, so that:

$\log p_2 = \log (2/2)$

= 0

In the same way:

$\log p_3 = \log (1/1)$

= 0

$\log p_4 = \log (0/2)$

= 0

Since $w_n = \frac{1}{4}$ ($1/N$), the final value of the BLEU of equation (30) is: BLEU =
 $1 + (\frac{1}{4} (0+0+0+ 0))$

= 1

= 100%

13) *He watched TV after studying*

with reference sentences *He watch TV after study*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 5$.

since $c \leq r$, then $BP_{BLEU} = e^{(1-r/c)}$, so $BP_{BLEU} = e^{(1-5/5)}$

= 1

From the translated sentences and references, there are five unigrams in the translated sentence (*He watched TV after studying*) and three unigramsthat are the same as the reference (*He watch TV after study*)

$\log p_1 = \log (3/5)$

=-0,2218

There are four 2-grams in the translated sentence and one 2-grams equal to thereference, so that:

$\log p_2 = \log (1/4)$

= -0,6020

In the same way: log

$$p_3 = \log (0/3)$$

$$= 0$$

$$= 0$$

Since $w_n = \frac{1}{4} (1/N)$, the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 ((-0,2218) + (-0,6020) + 0 + 0))$$

$$= 0.79,40$$

$$= 79,40\%$$

14) *We are from Makassar city*

with reference sentences *We are from Makassar city*

then the assessment with the BLEU method is as follows. The number of words

in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 5$.

since $c \leq r$, then $\text{BP BLEU} = e^{(1-r/c)}$, so $\text{BP BLEU} = e^{(1-5/5)}$

$$= 1$$

From the translated sentences and references, there are five unigrams in the

translated sentence (*We are from Makassar city*)

and five unigrams that are the same as the reference (), so that: (*We are from*

Makassar city)

$$\log p_1 = \log (5/5)$$

$$= 0$$

There are four 2-grams in the translated sentence and four 2-grams equal to the reference, so that:

$$= 0$$

In the same way:

$$\log p_3 = \log (3/3)$$

$$= 0$$

$$\log p_4 = \log (2/2)$$

$$= 0$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is: BLEU =

$$1 + (1/4 (0+0+0+0))$$

$$= 1$$

$$= 100\%$$

15) *This is son's book*

with reference sentences *This is putra's book*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 5$.

Number of words in the reference sentence $r = 3$. since $c \leq$

r , then $BP BLEU = e^{(1-r/c)}$, so $BP BLEU$

$$= 1$$

From the translated sentences and references, there are three unigrams in the translated sentence (*This is son's book*) and five unigrams that are the same as

the reference , so that: (*This is putra's book*)

$$= -0,2218$$

There are four 2-grams in the translated sentence and one 2-grams equal to thereference, so that:

$$\log p_2 = \log (1/4)$$

$$= -0,6020$$

In the same way:

$$\log p_3 = \log (0/3)$$

$$= 0$$

$$\log p_4 = \log (0/2)$$

$$= 0$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 ((-0,2218) + (-0,6020) + 0 + 0))$$

$$= 0.7940$$

$$= 79,40\%$$

16) *Is this your pen?*

with reference sentences *Is this your pen?*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-4/4)}$

= 1

From the translated sentences and references, there are four unigrams in the translated sentence (*Is this your pen?*)

and four unigrams that are the same as the reference, so that: (*Is this your pen?*)

$\log p_1 = \log (4/4)$

= 0

There are three 2-grams in the translated sentence and three 2-grams equal to the reference, so that:

$\log p_2 = \log (3/3)$

= 0

In the same way:

$\log p_3 = \log (2/2)$

= 0

$\log p_4 = \log (1/1)$

= 0

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is:

$BLEU = 1 + (1/4 (0+0+0+0))$

= 1

= 100%

17) *Is he a student ?*

with reference sentences *Is he a student ?*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 4$.

Number of words in the reference sentence $r = 4$.

since $c \leq r$, then $BP\ BLEU = e^{(1-r/c)}$, so $BP\ BLEU = e^{(1-4/4)}$

$= 1$

From the translated sentences and references, there are four unigrams in the translated sentence (*Is he a student ?*)

and four unigrams that are the same as the reference, so that: (*Is he a student ?*)

$\log p_1 = \log (4/4)$

$= 0$

There are three 2-grams in the translated sentence and three 2-grams equal to thereference, so that:

$\log p_2 = \log (3/3)$

$= 0$

In the same way:

$\log p_3 = \log (2/2)$

$= 0$

$\log p_4 = \log (1/1)$

= 0

Since $w_n = \frac{1}{4}$ ($1/N$), the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 (0+0+0+0))$$

= 1

= 100%

18) *Vania sent a letter to me*

with reference sentences *Vania send a letter for me*

then the assessment with the BLEU method is as follows. The number of words in the translated sentence $c = 6$.

Number of words in the reference sentence $r = 6$.

since $c \leq r$, then $\text{BP BLEU} = e^{(1-r/c)}$, so $\text{BP BLEU} = e^{(1-6/6)}$

= 1

From the translated sentences and references, there are six unigrams in the translated sentence (*Vania sent a letter to me*) and four unigrams that are the same as the reference (*Vania send a letter for me*)

$$\log p_1 = \log (4/6)$$

= -0,1760

There are four 2-grams in the translated sentence and two 2-grams equal to the reference, so that:

$$\log p_2 = \log (1/5)$$

= -0,6989

In the same way: log

$$p_3 = \log (0/4)$$

$$= 0$$

$$\log p_4 = \log (0/3)$$

$$= 0$$

Since $w_n = 1/4 (1/N)$, the final value of the BLEU of equation (30) is:

$$\text{BLEU} = 1 + (1/4 ((-0,1760) + (-0,6989) + 0 + 0))$$

$$= 0.7812$$

$$= 78,12\%$$

Table 4.1 The Level of Accuracy Through Microsoft Translator

Text	Percentage	Text	Percentage	Text	Percentage
1	100%	7	78,12%	13	79,40%
2	100%	8	100%	14	100%
3	35,43%	9	100%	15	79,40%
4	91,19%	10	73,02%	16	100%
5	100%	11	100%	17	100%
6	84,95%	12	100%	18	78,12%
Average	88,86%				

According to Dr. H. Fajri Ismail, M.Pd (2018:96-97) the concept of the average serves as a pivotal numerical value that encapsulates a singular representation of extensive datasets. This concept is rooted in mathematical principles pertaining to data calculation, where the average is derived by dividing the cumulative total of all individual data points by the frequency, or the number of data entries. When this calculation is performed, the resultant average emerges as a significant figure that provides insights into the overall distribution and central

tendency of the data being analyzed. In this specific instance, the calculated average yields a value of 88.86%. This figure not only reflects the collective performance or characteristics of the dataset but also offers a concise summary that aids in comprehending the broader implications of the data involved. Thus, the average stands as an essential tool in data analysis, facilitating the interpretation of complex information through a straightforward numerical representation.

B. Research Discussion

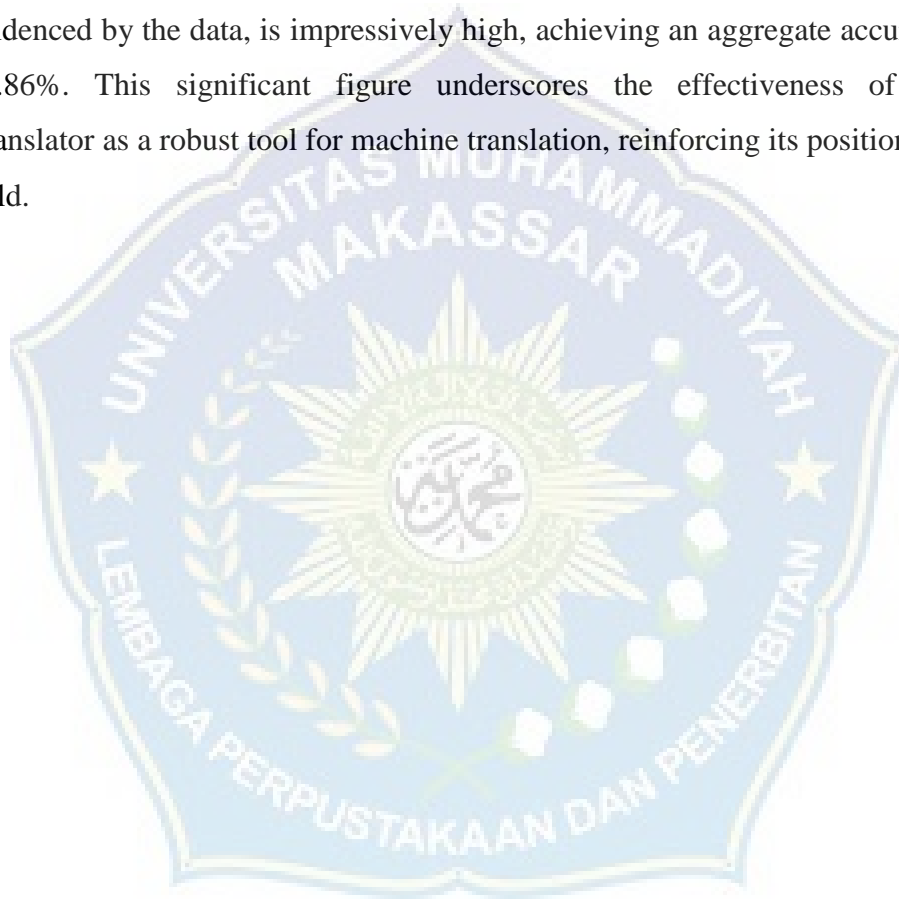
The analysis presented indicates that the performance metric known as BLEU, which is utilized for the evaluation of translation outcomes, demonstrates a high level of efficacy, particularly in regards to the assessment of straightforward sentences. It is essential to note that BLEU operates within a defined reference range, with values ranging from 0 to 1. To facilitate a clearer comprehension of these values, they are frequently expressed as percentages, thereby making the results more accessible and interpretable for users and researchers alike.

The evaluation process is structured into four distinct stages, thereby enhancing the relevance and reliability of the assessment results derived from the BLEU metric. Despite this systematic approach, challenges persist in accurately identifying N-gram precision, which can impact the overall assessment. Nonetheless, the sufficiency of the BLEU metric as a reference point in the evaluation of machine translation performance remains evident.

Referring to the aforementioned table, the text under analysis, categorized according to percentage accuracy levels, reveals noteworthy findings regarding the varying quality of translations. Specifically, the third text stands out as having the lowest overall translation quality when assessed against the other samples. The data indicate that out of the total sentences examined, ten sentences achieved a perfect accuracy rate of 100%, which reflects optimal translation performance.

Additionally, there are seven sentences that surpass the 50% accuracy threshold, indicating a moderate degree of translation quality. However, it is concerning to note that one particular sentence registered a significantly low accuracy level of 35.43%, which suggests substantial issues with its translation fidelity.

On a broader scale, the overall accuracy produced by Microsoft Translator, as evidenced by the data, is impressively high, achieving an aggregate accuracy rate of 88.86%. This significant figure underscores the effectiveness of Microsoft Translator as a robust tool for machine translation, reinforcing its position within the field.



CHAPTER V

CONCLUSIONS AND SUGGESSTIONS

A. Conclusion

This chapter serves as the concluding section of this thesis, effectively building upon the findings and discussions presented in Chapter Four. The purpose of this chapter is to provide clear conclusions that directly address the problem statements outlined in Chapter One, thereby offering a comprehensive response to the research questions raised earlier in the thesis.

In particular, the focus of this conclusion revolves around the quality of the translated texts produced when utilizing Microsoft Translator for translating sentences from Indonesian to English. The evaluation of translation quality has been based on a systematic analysis of 18 sentences, each subject to five distinct assessments aimed at determining the accuracy of the translations generated.

The results from this assessment reveal a noteworthy outcome: the average percentage score for accuracy achieved by Microsoft Translator in this context is 88.86%. This score indicates a high level of precision in the translations that were evaluated, demonstrating that Microsoft Translator performs effectively at the junior high school level when tasked with converting sentences from Indonesian to English.

This conclusion underscores the reliability of Microsoft Translator as a tool for language translation, particularly within the educational framework of junior high school students.

The findings not only affirm the effectiveness of digital translation solutions but also provide valuable insights for educators and students who may rely on such tools for language learning and comprehension. Overall, the data gathered and analyzed in this thesis contribute significant knowledge to the field of translation studies, particularly in the context of using technology to facilitate language understanding.

B. Suggestions

This research shows that Microsoft Translator has able translate Indonesian text into English correctly. So that, the researcher gives some suggestions, as follow:

1. For Users

- a. In using Microsoft Translator, Users may directly use the translation results as the final result of a translation but there is nothing wrong with confirming the translation results to translators or translation experts.
- b. There are still errors from the results of Microsoft Translator, so users are advised to correct these errors in accordance with English rules. However, the results of Microsoft Translator can still be used as entry-input that can be rearranged by translators in order to get a good translation that is in accordance with English rules.

2. Students

The researcher hopes that this research can give benefit for students of English Department especially for them who take translation study as their major to learn about the quality analysis of Microsoft Translator.

3. Other researcher

The researcher hopes that this research can be one of addition information and support to the other researcher to analyze Microsoft Translator or the other Machine Translator further.

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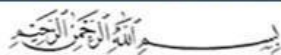






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Nomor : 15190/FKIP/A.4-II/XI/1445/2023
 Lampiran : 1 (Satu) Lembar
 Perihal : Pengantar Penelitian

Kepada Yang Terhormat
Ketua LP3M Unismuh Makassar

Di -
 Makassar

Assalamu Alaikum Warahmatullahi Wabarakatuh

Dekan Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Makassar menerangkan bahwa mahasiswa tersebut di bawah ini:

Nama : Azhan Eli Saputra
 Stambuk : 105351117417
 Program Studi : Pendidikan Bahasa Inggris
 Tempat/ Tanggal Lahir : Kepulauan Selayar / 07-08-1999
 Alamat : Perum. Griya Darussalam Blok R No.9

Adalah yang bersangkutan akan mengadakan penelitian dan menyelesaikan skripsi dengan judul: USING THE BLEU METRIC TO ASSESS THE PERFORMANCE OF MICROSOFT TRANSLATOR FOR ENGLISH TRANSLATIONS AT SMPN 3 SUNGGUMINASA

Demikian pengantar ini kami buat, atas kerjasamanya dihaturkan *Jazaakumullahu Khaeran Katsiraan.*

Wassalamu Alaikum Warahmatullahi Wabarakatuh.

Makassar, 6 Jumadal Ula 1441 H
 24 Nopember 2023 M

Dekan



Erwin Akib, M.Pd., Ph.D.
 NBM. 860 934



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Lamp : 1 (satu) Rangkap Proposal

23 Nopember 2023 M

Hal : Permohonan Izin Penelitian

Kepada Yth,

Bapak Gubernur Prov. Sul-Sel

Cq. Kepala Dinas Penanaman Modal & PTSP Provinsi Sulawesi Selatan

di -

Makassar

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Berdasarkan surat Dekan Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Makassar, nomor: 15190/FKIP/A.4-II/XI/1445/2023 tanggal 24 Nopember 2023, menerangkan bahwa mahasiswa tersebut di bawah ini :

Nama : AZHAN ELI SAPUTRA

No. Stambuk : 10535 1117417

Fakultas : Fakultas Keguruan dan Ilmu Pendidikan

Jurusan : Pendidikan Bahasa Inggris

Pekerjaan : Mahasiswa

Bermaksud melaksanakan penelitian/pengumpulan data dalam rangka penulisan Skripsi dengan judul :

"USING THE BLEU METRIC TO ASSESS THE PERFORMANCE OF MICROSOFT TRANSLATOR FOR ENGLISH TRANSLATIONS AT SMPN 3 SUNGGUMINASA"

Yang akan dilaksanakan dari tanggal 29 Nopember 2023 s/d 29 Januari 2024.

Sehubungan dengan maksud di atas, kiranya Mahasiswa tersebut diberikan izin untuk melakukan penelitian sesuai ketentuan yang berlaku.

Demikian, atas perhatian dan kerjasamanya diucapkan Jazakumullahu khaeran

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Ketua LP3M,



Dr. Arief Muhsin, M.Pd

NBM 1127761

RESEARCH INSTRUMENT

The following sentence list is an instrument related to research on the use of BLEU metrics to assess the performance of Microsoft Translator. Therefore, on the sidelines of your busy life, we ask for your willingness to be able to choose one of the sentences below which will later become the main source for researchers to assess the performance of Microsoft Translator.

TRANSLATIONS TASK

1. Kami pergi ke sekolah naik sepeda.
2. Temanku tinggal di Gowa.
3. Wawan membeli Handphone baru.
4. Putri belajar dengan sangat giat untuk ujian nasional.
5. Kucing mencoba memakan kue ulang tahunku.
6. Ibu pergi ke pasar tiap jam 7 pagi.
7. Dia menonton TV setelah belajar.
8. Aku mencuci piring tiap malam.
9. Mereka bukan dari kelas yang sama.
10. Apakah anda guru bahasa inggris?
11. Apakah dia seorang pelajar?
12. Vania mengirim surat untuk saya.
13. Kami berasal dari kota Makassar.
14. Dia menceritakan kepada kami tentang rumah hantu.
15. Kamu adalah murid terbaik di kelas ini.
16. Apakah ini pulpen milikmu ?
17. Chiko adalah seekor kucing.
18. Jamila mencintai koko.
19. Ini buku milik Putra.

20. Mereka dari kelas yang sama.
21. Beberapa dari mereka berasal dari Makassar.
22. Gambar ini sangat menakjubkan.
23. Aku makan 3 kali sehari.
24. Kelas kami mulai pukul 7.00 pagi.
25. Saya adalah seorang dokter.
26. Kelinci makan sayuran.
27. Ayam memiliki 2 kaki.
28. Dia sangat cantik.
29. Pesta ulang tahunku akan dimulai pukul 7.00 malam.
30. Aku tiba di rumah pukul 8.00 malam.
31. Dia suka nasi goreng.
32. Aku membaca buku.
33. Fandi suka main sepak bola.
34. Tas aku berwarna hitam.
35. Ibuku seorang guru.
36. Jamal suka mendengarkan musik.
37. Aku selalu bangun jam 5.00 subuh.
38. Ical gemar bermain gitar.
39. Hadiah ulang tahunku adalah sebuah sepeda.
40. Elsa ingin membeli boneka beruang.

List of Sample



PEMERINTAH KABUPATEN GOWA
DINAS PENDIDIKAN
SMP NEGERI 3 SUNGGUMINASA

NPSN : 40301049 Alamat : Jl. Mustapa Dg Bunga
Kel. Romangpolong Kec. Somba Opu Kab. Gowa Helpdesk 0899-889-2242
Website: <https://smpn3sungguminasa.sch.id>, Email : info@smpn3sungguminasa.sch.id



DAFTAR NAMA PESERTA UJIAN SEKOLAH
SMP NEGERI 3 SUNGGUMINASA
TAHUN PELAJARAN 2023 / 2024

RUANGAN 1

No. Urut	Nomor Tes	Nama Peserta Didik
1	06-002-0001- 9	A SEPTHA DIRGANTARA
2	06-002-0002- 8	ABDHE NEGARA
3	06-002-0003- 7	AIDUL FATIR JIWANSYAH
4	06-002-0004- 6	AFIFA KHAIRUNNISA
5	06-002-0005- 5	AINUR FAIQAH
6	06-002-0006- 4	AMINRA ZAKY KURNIAWAN
7	06-002-0007- 3	ANDI AURIZA SATIVA ANNUR
8	06-002-0008- 2	ANDI TIARA IHSYA MUNIK
9	06-002-0009- 1	AQILAH ULYA EFENDI
10	06-002-0010- 9	AULIA RIZQI
11	06-002-0011- 8	AYU ANANDA
12	06-002-0012- 7	FATUR RAHMAN
13	06-002-0013- 6	FITRA YUDISTIRA
14	06-002-0014- 5	HESTI ADELIA JAFAR
15	06-002-0015- 4	INDRY AFRIANTI ISMAIL
16	06-002-0016- 3	KAILA DWI ASTUTI
17	06-002-0017- 2	MUH. DHAVA RAIS SYAH PUTRA
18	06-002-0018- 1	MUH. IMAN ALFIRIZKY
19	06-002-0019- 9	MUH. NABIL SAPUTRA
20	06-002-0020- 8	MUH. RAIDZAN AL AHDZAN

Student Translation Results

1. A. Septa dirgantara
 Temanaku bingung digawa
 my friend lives in gawa

2. A. Tiara
 chiko adalah seekor kucing
 chiko is a cat

3. ABDU FATIR JIWANISYAH
 AKU MEMBACA BOKU
 I'm reading a book

4. MUH. IMAN AKFIRIZKI
 DIA SANGAT CANTIK
 She is very beautiful

5. Andi Anisa Satwa Annur
 Ibuku seorang guru
 my mother is a teacher

6. AGILAH ULYA EFENDI
 Dia suka nasi goreng
 He likes fried rice

7. MUH. Raidzan AL AHZAN
 Ical gemar bermain gitar
 Ical likes to play guitar

8. ABDHE NEGARA
 Mereka dari kelas yang sama
 They are from the same class

9. Afifa ~~Khairunnisa~~
 Tas aku berwarna hitam
 my bag is black

10. Ainur FAIDAH
 AKU MAKAN 3 KALI SEHARI
 I eat three times a day



11. Amira Zaky Kurniawan
Keliaci makan sayuran
Rabbit eat vegetables

12. Andi Auriza Jativa Annur
Saya adalah seorang dokter
I am a doctor

13. Aulia Rizpi
DIA MENONTON TV SETELAH BELAJAR
HE WATCH TV AFTER STUDY

14. Ayu ANANDA
Kami berasal dari kota Makassar
we are from Makassar city

15. FATUR RAHMAN
INI BUKU MILIK PUTRA
THIS IS PUTRA'S BOOK

16. HESTI ADELIA JAFAR
APAKAH INI PUIPEN MILIKMU?
IS THIS YOUR PEN?

17. Indry Afranti Ismail
Apakah dia seorang Pelajar?
IS HE A STUDENT?

18. Kalpa Dwi Astuti
Vanica mengirim surat untuk saya
Vanica send a letter for me

Bleu Metric Assessment for Translation Results from Students and Microsoft Translator

My Friends lives in Gowa
My Friends lives in Gowa

⇒ Precision scores

- 1) 1-gram 5/5
- 2) 2-gram 4/4
- 3) 3-gram 3/3
- 4) 4-gram 2/2

⇒ Geometric Average Precision

- 1) $\log(5/5) = 0$
- 2) $\log(4/4) = 0$
- 3) $\log(3/3) = 0$
- 4) $\log(2/2) = 0$

⇒ Brevity Penalty

$$e^{(1-5/5)} = 1$$

⇒ Bleu score

$$1 + \left(\frac{0+0+0+0}{4} \right)$$

$$= 1$$

$$= 100\%$$

Chiko is a cat
Chiko is a cat

⇒ Precision scores

- 1) 1-gram 4/4
- 2) 2-gram 3/3
- 3) 3-gram 2/2
- 4) 4-gram 1/1

⇒ Geometric Average Precision

- 1) $\log(4/4) = 0$
- 2) $\log(3/3) = 0$
- 3) $\log(2/2) = 0$
- 4) $\log(1/1) = 0$

⇒ Brevity penalty

$$e^{(1-4/4)} = 1$$

⇒ Bleu Score

$$1 + \left(\frac{0+0+0+0}{4} \right)$$

$$= 1$$

$$= 100\%$$

I read books
I am reading a book

⇒ Precision scores

- 1) 1-gram 1/3
- 2) 2-gram 0/2
- 3) 3-gram 0/1

⇒ Geometric Average precision

- 1) $\log(1/3) = -0,4771$
- 2) $\log(0/2) = 0$
- 3) $\log(0/1) = 0$

⇒ Brevity penalty

$$e^{(1-3/3)} = 0,5134$$

⇒ Bleu score

$$0,5134 + \left(\frac{-0,4771+0+0}{4} \right)$$

$$= 0,3543$$

$$= 35,43\%$$

My bag is black

My bag is black

⇒ precision scores

- 1) 1-gram $4/4$
- 2) 2-gram $3/3$
- 3) 3-gram $2/2$
- 4) 4-gram $1/1$

⇒ Geometric Average Precision

- 1) $\log 4/4 = 0$
- 2) $\log 3/3 = 0$
- 3) $\log 2/2 = 0$
- 4) $\log 1/1 = 0$

⇒ Brevity penalty
 $e^{(1-4/4)} = 1$

⇒ Bleu score

$$1 + \left(\frac{0+0+0+0}{4} \right)$$

$$= 1$$

$$= 100\%$$

1. I eat 3 times a day

I eat three times a day

⇒ precision scores

- 1) 1-gram $5/6$
- 2) 2-gram $3/5$
- 3) 3-gram $2/4$
- 4) 4-gram $1/3$

⇒ Geometric Average Precision

- 1) $\log 5/6 = -0,0791$
- 2) $\log 3/5 = -0,2218$
- 3) $\log 2/4 = -0,3010$
- 4) $\log 1/3 = -0,4771$

⇒ Brevity penalty
 $e^{(1-6/6)} = 1$

⇒ Bleu score

$$1 + \left(\frac{(-0,0791) + (-0,2218) + (-0,3010) + (-0,4771)}{4} \right)$$

$$= 0,7302$$

$$= 73,02\%$$

Rabbit eat vegetables
Rabbit eat vegetables

⇒ Precision scores

- 1) 1-gram $3/3$
- 2) 2-gram $2/2$
- 3) 3-gram $1/1$

⇒ Geometric Average Precision

- 1) $\log 3/3 = 0$
- 2) $\log 2/2 = 0$
- 3) $\log 1/1 = 0$

⇒ Brevity penalty

$$e^{(1-3/3)} = 1$$

⇒ Bleu score

$$1 + \left(\frac{0+0+0}{4} \right)$$

$$= 1$$

$$= 100\%$$

I am a doctor

I am a doctor

⇒ Precision scores

- 1) 1-gram $4/4$
- 2) 2-gram $3/3$
- 3) 3-gram $2/2$
- 4) 4-gram $1/1$

⇒ Geometric Average Precision

- 1) $\log 4/4 = 0$
- 2) $\log 3/3 = 0$
- 3) $\log 2/2 = 0$
- 4) $\log 1/1 = 0$

⇒ Brevity penalty

$$e^{(1-4/4)} = 1$$

⇒ Bleu score

$$1 + \left(\frac{0+0+0+0}{4} \right)$$

$$= 1$$

$$= 100\%$$

He watched TV after studying

He watch TV after study

⇒ Precision scores

- 1) 1 - gram $3/5$
- 2) 2 - gram $1/4$
- 3) 3 - gram $0/3$
- 4) 4 - gram $0/2$

⇒ Geometric Average precision

- 1) $\log 3/5 = -0,2218$
- 2) $\log 1/4 = -0,6020$
- 3) $\log 0/3 = 0$
- 4) $\log 0/2 = 0$

⇒ Brevity penalty

$$e^{(1-3/5)} = 1$$

⇒ Bku score

$$1 + \frac{(-0,2218) + (-0,6020) + 0 + 0}{4}$$

$$= 0,7940$$

$$= 79,40\%$$

we are from Makassar City

we are from Makassar City

⇒ Precision scores

- 1) 1 - gram $5/5$
- 2) 2 - gram $4/4$
- 3) 3 - gram $3/3$
- 4) 4 - gram $2/2$

⇒ Geometric Average precision

- 1) $\log 5/5 = 0$
- 2) $\log 4/4 = 0$
- 3) $\log 3/3 = 0$
- 4) $\log 2/2 = 0$

⇒ Brevity penalty

$$e^{(1-5/5)} = 1$$

⇒ Bku score

$$1 + \frac{(0+0+0+0)}{4}$$

$$= 1 = 100\%$$

This is the sen's book

This is putra's book

⇒ precision scores

1) 1 - gram $3/5$

2) 2 - gram $1/4$

3) 3 - gram $0/3$

4) 4 - gram $0/2$

⇒ Geometric Average precision

1) $\log \frac{3}{5} = -0,2218$

2) $\log \frac{1}{4} = -0,6020$

3) $\log \frac{0}{3} = 0$

4) $\log \frac{0}{2} = 0$

⇒ Brevity Penalty

$c > r = 1$

⇒ Bleu score

$$1 + \frac{(-0,2218) + (-0,6020) + 0 + 0}{4}$$

$= 0,7940$

$= 79,40\%$

16. 15 this your pen?

15 this your pen?

⇒ precision scores

1) 1 - gram $4/4$

2) 2 - gram $3/3$

3) 3 - gram $2/2$

4) 4 - gram $1/1$

⇒ Geometric Average precision

1) $\log \frac{4}{4} = 0$

2) $\log \frac{3}{3} = 0$

3) $\log \frac{2}{2} = 0$

4) $\log \frac{1}{1} = 0$

⇒ Brevity Penalty

$c(1 - 4/4) = 1$

⇒ Bleu score

$$1 + \left(\frac{0+0+0+0}{4} \right)$$

$= 1$

$= 100\%$

Is he a student?
Is he a student?

⇒ Precision scores

- 1) 1-gram $4/4$
- 2) 2-gram $3/3$
- 3) 3-gram $2/2$
- 4) 4-gram $1/1$

⇒ Geometric Average Precision

- 1) $\log 4/4 = 0$
- 2) $\log 3/3 = 0$
- 3) $\log 2/2 = 0$
- 4) $\log 1/1 = 0$

⇒ Brevity Penalty

$$e^{(1-4/4)} = 1$$

⇒ Bleu score

$$1 + \left(\frac{0+0+0+0}{4} \right)$$

$$= 1$$

$$= 100\%$$

Vania sent a letter to me

Vania send a letter for me

⇒ Precision scores

- 1) 1-gram
- 2) 2-gram
- 3) 3-gram
- 4) 4-gram

⇒ Geometric Average Precision

$$1) \log 4/6 = -0,1760$$

$$2) \log 1/5 = -0,6989$$

$$3) \log 0/4 = 0$$

$$4) \log 0/3 = 0$$

⇒ Brevity Penalty

$$e^{(1-6/6)} = 1$$

⇒ Bleu score

$$1 + \left(\frac{(-0,17607) + (-0,6989) + 0 + 0}{4} \right)$$

$$= 0,7812$$

$$= 78,12\%$$

Data Collection Process







PEMERINTAH KABUPATEN GOWA
DINAS PENDIDIKAN
SMP NEGERI 3 SUNGGUMINASA



NPSN : 40301049 Alamat : Jl. Mustapa Dg Bunga
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SURAT KETERANGAN

Nomor : 135/DISDIK-GW/SMP.03/PG/VI/2024

Yang bertandatangan di bawah ini, Kepala SMP Negeri 3 Sungguminasa Kab. Gowa, dengan ini menyatakan bahwa :

N a m a : AZHAN ELI SAPUTRA
Nomor Pokok : 105351117417
Tempat / Tanggal Lahir : Selayar, 07 Agustus 1999
Universitas : Universitas Muhammadiyah Makassar
Program Studi : Pendidikan Bahasa Inggris

Benar telah melaksanakan Penelitian/Pengumpulan data, sebagai tugas akhir guna menyelesaikan studi pada Program Sarjana, dengan judul :

“USING THE BLUE METRIC TO ASSESS THE PERFORMANCE OF MICROSOFT TRANSLATOR FOR ENGLISH TRANSLATIONS AT SMPN 3 SUNGGUMINASA ”

Demikian surat keterangan ini dibuat untuk dipergunakan sebagaimana mestinya.

Sungguminasa, 08 Juni 2024

Kepala Sekolah,

FAJAR MA'RUF, S.Pd., M.M
NIP. 19701226199512 1 001



**MAJELIS PENDIDIKAN TINGGI PIMPINAN PUSAT MUHAMMADIYAH
UNIVERSITAS MUHAMMADIYAH MAKASSAR
UPT PERPUSTAKAAN DAN PENERBITAN**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

SURAT KETERANGAN BEBAS PLAGIAT

**UPT Perpustakaan dan Penerbitan Universitas Muhammadiyah Makassar,
Menerangkan bahwa mahasiswa yang tersebut namanya di bawah ini:**

Nama : Azhan Eli Saputra

Nim : 105351117417

Program Studi : Pendidikan Bahasa Inggris

Dengan nilai:

No	Bab	Nilai	Ambang Batas
1	Bab 1	10 %	10 %
2	Bab 2	25 %	25 %
3	Bab 3	9 %	10 %
4	Bab 4	7 %	10 %
5	Bab 5	0 %	5 %

Dinyatakan telah lulus cek plagiat yang diadakan oleh UPT- Perpustakaan dan Penerbitan Universitas Muhammadiyah Makassar Menggunakan Aplikasi Turnitin.

Demikian surat keterangan ini diberikan kepada yang bersangkutan untuk dipergunakan seperlunya.

Makassar, 05 Juni 2024

Mengetahui,

Kepala UPT- Perpustakaan dan Penerbitan,



CURRICULUM VITAE



Azhan Eli Saputra was born on August 07th, 1999 in Benteng, Kepulauan Selayar South Sulawesi. He is the first child of marriage of his parents,. Mei Sudarjum and Elistia Nurfainah. He began his education in SDI Gollek and graduated in 2011.

He continued his study in SMP Negeri 4 Bontomanai and graduated in 2014 and then he continued his study in SMA Negeri 1 Selayar and graduated 2017. In the same year, he was accepted as a student in English Education Department Faculty of Teacher Training and Education, Universitas Muhammadiyah Makassar. By the bless and mercy of Allah SWT and pray also support from beloved family, the researcher could finish his study at Universitas Muhammadiyah Makassar by compiling a thesis under the title **“Using The BLEU Metric to Assess The Performance of Microsoft Translator for English Translations at SMPN 3 Sungguminasa”**.