TRANSLATION OF ENGLISH TASKS INTO INDONESIAN THROUGH ONLINE MACHINE TRANSLATION PROGRAM

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Abstract

The objective of this research is to obtain a deep understanding about the online machine translation of graduate students in the Language Education Doctoral Program of State University of Jakarta, Indonesia, from source language to target language in order to achieve equivalence in the subject of Language Translation and Education. The approach used is qualitative approach with ethnography method. The translation process is conducted by writing down words or copying-pasting sentences to be translated and then those words/sentences will be automatically translated by machine translation. A repetitive edit, revision and correction process shall be first performed in order to get an optimum result i.e. translated sentences are equal in textual and meanings. The deviations occur due to inaccurate equivalents caused by different cultures between the source language and target language as well as the scope of translated language scientific field. The used strategy is a literal translation. Based on the research results, the translation of English tasks to Indonesian through the online translation program is very useful to facilitate the students' lecturing process in completing their tasks.

Keywords: Translation, English tasks, online machine translation.

Although the online machine translation is very useful for users especially for university students in Diploma, Bachelor, Magister and Doctoral degree. However, there are still many problems found during the operating phase before data input, translation process and post translation, acceptable types of texts in the online machine translation, equivalence forms, deviations, and used translation strategies so that the optimum result of equivalence is achieved and the most popular lectures in the online machine translation.

The history of machine translation was begun in 1629 when Descartes tried to seek a universal language with equal ideas in different languages to jointly interpret a language symbol. Machine translation was created based on the Weaver Agreement on Translation in 1949. The first researcher in Machine Translation is Bar-Hillel who started his research in MIT in 1951. In the same year, the research

team of Georgetown Machine Translation conducted the same research and their working system was publicly demonstrated in 1954. The research program of Machine Translation was rapidly developed in Japan and Russia in 1955 in which the first conference of Machine Translation was held in London in 1956. Researchers continued to develop this Machine Translation by establishing the Association of Machine Translation and Computational Linguistic in United States of America in 1962 and then the National Science Academy formed the Automatic Language Processing Advisory Committee (ALPAC) to study the Machine Translation in 1964. The development was in fact slow. Moreover, after ALPAC presented their report in 1966 stating that the 10-years research failed to meet the public's expectation and thus the budget was significantly cut. While the France Textile Institute used the Machine Translation in 1970, the Brigham Young University used the Automatic Machine Translation in 1971. XEROX used the SYSTRAN to translated technical manuals in 1978.

Since the computation power developed in 1980 that made it less expensive, the increase of interest was shown in the Statistic Model of Machine Translation. Various Machine Translation companies were established including TRADOS in 1984 and became the first to develop and market the Translation Memory Technology in 1989. The Machine Translation was started by SYSTRAN, which offered free translation for free texts (1996), and then followed by Alta Visa Babelfish, which included 500,000 requests per day (1997). Franz-Josef Och (who then served as the Head of Google Translation Development) won the Quick Translation competition that held by DARPA in 2003. During that time, there are a lot of new findings including MOSES, which was a statistic open source provided by the Machine Translation (2007), services of texts translation or SMS for mobile electronic devices in Japan (2008), and mobile phones that provided oral translation for English, Japan, and Chinese (2009). The latest one was Google announcing that Google Translate was roughly translating one million books per day (2012).

During the translation, the translation process by human includes 2 activities i.e. decoding the represented meaning of source texts and writing down those codes in target language. There is complicated cognitive process within this seemingly simple procedure. In order to translate the meaning of the whole source text, the translator must interpret and analyze all of the features within the text to be translated, which is a process that demands a deep understanding in grammar, semantics, syntax, idioms, and others of the source texts as well as culture of the source language speaker. The three strategies are Direct Machine Translation, Transfer Machine Translation and Interlingua Machine Translation.
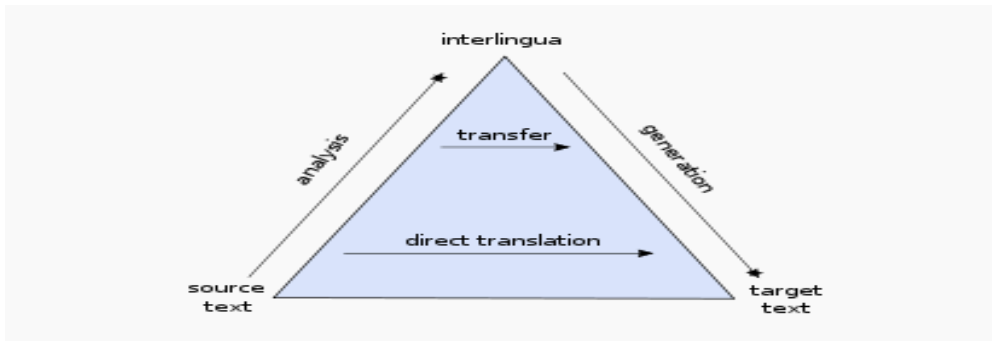
The Vauquois Pyramid above shows the depth that compared by the intermediary's representation; the machine translation between languages is on top followed by the translation by transfer and then consecutively followed by direct translation. The Machine Translation may use methods based on language rules/formula, which means that words will be translated linguistically – speaking verbally, the most suitable words of target language will replace words from the source language.

One of lectures using machine translation is the Language Translation and Teaching. In the machine translation research and development, there are some main theoretical strategies and methodologies that may help the implementation of current research and development projects of machine translation i.e. Direct, Transfer and Interlingua, Grammar and Parsing, Sub Language, Performance and Evaluation. Theoretical Strategy: Direct Strategy, Transfer Strategy, Interlingua Strategy and Methodologist Strategy: Grammar and Parsing, Sub Language, Performance and Evaluation.

There are 3 (three) operating systems of Machine Translation i.e. Georgetown and its Derivatives (a classic template of Direct Strategy), Georgetown Machine Translation System (Zarechnak, 1979), "Direct Strategy" that later be compared by various manifestations of SYSTRAN system (Wheeler, 1984: Toma, 1977), SPANAM System that used since 1980 is translating language pair of Spanish and English.

The Taum-Meteo Group of Machine Translation in Montreal University (TAUM) was active in the period of 1968 – 1980 and produced a number of experimental systems (TAUM-73, TAUM-76, and TAUM-Aviation), and one operating system (TAUM-METEO). TAUM-METEO is considered as the closest to the full automatic high-quality translation result among today's operating systems. In overall, the TAUM project methodology is transfer. Transfer components consist of two sub-components i.e. lexical and structural.

The Machine Translation Metal Project from the Linguistic Research Center of Texas University, Austin, has been active in one form to the others since 1961. This project is known as METAL and has been working on the big-scale machine translation system from German language into English in telecommunication field (Bbennett and Slocum, 1985). This project was supported

by Siemens Corporation and the operating system was diverted to the sponsor for a market test held in January 1985. Nowadays, this system is extended by including Spanish and Chinese as target language and English as the additional source language.

There were 5 experimental research projects regarding the Machine Translation, which are EUROTRA (based on transfer system), Machine Translation Project by the Government of Japan (based on transfer system), SUSY (based on transfer system), DLT (based on Interlingua system), and Distributed Language Translation/DLT (Witkam, 1983). These projects aimed to develop the multilingual Machine Translation by using the Interlingua Model (based on interlingua system). The Translator Nirenburg (the writer of book Machine Translation: Theoretical and Methodological) was involved in the development project of Machine Translator model called as Translator, which was also based on the Interlingua design, which was different from others under the Interlingua Strategy. The Translator project under the Interlingua Approach accommodated the information of pragmatic structures and the discourse within the source text.

A research relevant to this research was the research by Hongping Lim and Myla Archer (2007) titled "Translation Templates to Support Strategy Development in PVS" in the journal of Electronic Notes in Theoretical Computer Science. The finding of this research is how translation techniques used in integrating PVS into the TIOA (Timed Input/Output Automata) system development framework produce PVS specifications structured to support development of PVS strategies that implement reasoning steps appropriate for proving TIOA specification properties. The similarity between these two researches is related to the translation. Furthermore, the next research was by Diego Ordóñez Camacho, Kim Mens, Mark van den Brand, and Jurgen Vinju (2010) titled "Automated generation of program translation and verification tools by using annotated grammars" in the journal of Science of Computer Programming. In this research, focus on the problem of automating the process of building translators between operations languages, a family of DSLs used to program satellite operations procedures. We exploited their similarities to semi-automatically build transformation tools between these DSLs. The similarity between these conducted researches is related to the translation of online computer.

Moreover, Yuval Marton and Imed Zitouni conducted a research titled "Transliteration normalization for Information Extraction and Machine Translation" in the journal of King Saud University Journal of King Saud University – Computer and Information Sciences in 2014. This research aimed to identify and cluster name spelling variants using a Statistical Machine Translation method: word alignment. The variants were identified by being aligned to the same ''pivot" name in another language (the source-language in Machine Translation settings). The similarity between this research and research by the expert is that they are related to the language translation. In 2016, Mahmoud M. El-Gayyar,

Amira S. Ibrahim, and M.E. Wahed conducted a research titled "Translation from Arabic speech to Arabic Sign Language based on cloud computing" in the journal of Egyptian Informatics Journal. This research showed that to present a mobile-based framework that will help Arabic deaf people to communicate 'on the go' easily with virtually any one without the need of any specific devices or support from other people. The framework utilized the power of cloud computing for the complex processing of the Arabic text. The speech processing produced a cartoon avatar showing the corresponding Egyptian Arabic Sign Language on the mobile handset of the deaf person.

By referring to the above researches, a research titled "Translation of English Tasks to Indonesia Through Online Computer Translation Program" is conducted. This research is conducted on students in the Language Translation and Teaching lecture. This lecture will equip the students to study the translation theories and their implementation in language teaching including translation theories, approaches, and strategies as well as translation issues in language teaching so that the students are capable in implementing the translation theories in language teaching. This could also be a special skill in language teaching and pure translation. The learning achievement of this lecture is that the students are expected to be able to analyze, criticize, develop, and design the language teaching. One of the learning achievements is the students master the machine translation. The assessment of learning achievements was conducted thoroughly based on tasks, mid-semester exam and end-of-semester exam.

METHOD

This research is an ethnography research, which is a part of qualitative research. This research will present the online machine translation from the source language to target language in order to have the equivalence to the students of Language Education of Postgraduate Doctoral Program of State University of Jakarta.

In this research, the researchers collected all data (*subtitle*) and describe each element that is analyzed. This research' informants are the students of Language Education, Doctoral Program of Postgraduate of State University of Jakarta, from the source language to the target language to reach equivalence. SL is the foreign language and the translation result uses TL. Data Analysis Procedure consists of text analysis. Data analysis tends to involve development of description and themes. Interpretation tends to contain broader findings meaning statement. Data validity is in the form of credibility, transferability, dependability, and confirmability.

RESULTS AND DISCUSSION

1. Reasons For Using Online Machine Translation

Based on the interview results given to approximately thirty (30) informants who gave similar opinions or same meaning are those who tend to use online machine translation because in order to help students in doing their tasks with book references in foreign languages; translating song lyrics such as English, French, Japanes, Arabic, and Turkish; and translating conversation of their friends who come from other countries. The students usually use online machine translation when there is any word/phrase/clause/sentence, which the meaning or the intention they do not really understand from the book reference that they read.

Here is a diagram of 30 informants who gave reasons for using online machine translation, 99,40% respondents said it is very effective and efficient in doing various tasks of students and the remaining 0,60% because they do not know how to operate it.

Diagram 1
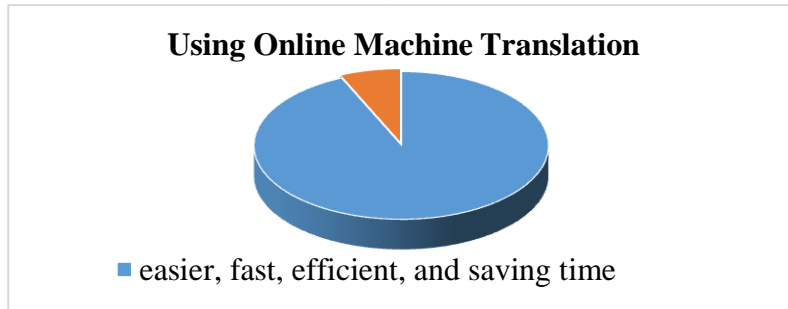
**2. Types of Text That Usually Use Online Machine Translation**

From 30 informants who gave opinions are generally also experience similar or same meanings, such as the one that was said by Dhinar/informant 1 (a student of Doctoral program, Language Education, year 2015/2016). He said "I usually use online machine translation to help me in understanding description text and exposition text in scientific books, and narration text in song lyrics".

Generally the data analysis results from the informants strengthen the fact that the texts used by the students for online translation are description text and exposition text in scientific books, and narration text in song lyrics, either in the forms of hard copy or *softcopy*. However, there are also informants who explained different and totally short explanation, like what Tata Tambi/informant 2 (a student of Doctoral program, Language Education, year 2015) said, "Academic texts and lecture papers." In line with that, Siti Masfufah/informant 3 (a student of Doctoral program, Language Education, year 2015/2016) also said that the texts that are often use online machine translation are short phrases or the ones that have not been known."

From 30 informants, 70,80% of them said that texts used by the students for online translation are exposition text, narration text, and descriptive text; the

remaining 10,20% said that texts used by the students for online translation are song lyrics and others. Herewith the analysis data results shown in Diagram:

Diagram 2

Types of text translated

■ exposition, descriptive, and narration texts
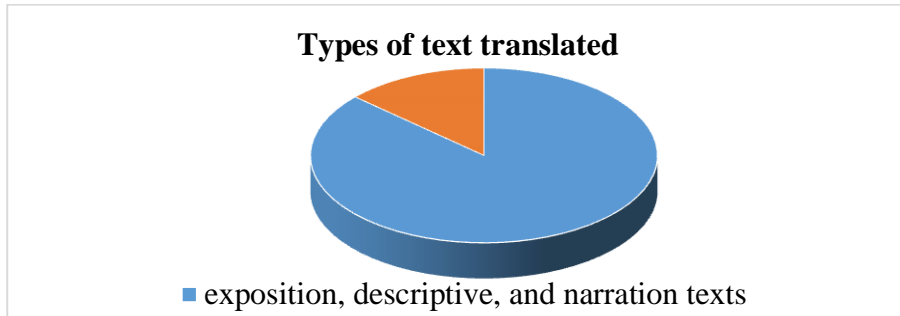
3. Tasks Translated Using *Online* Machine Translation

Based on 30 informants, tasks that are translated using on line machine translation have similar trends, although the phrases and sentences are different but in terms of meaning and purpose remain the same. As cited from Ahmad/informant 4 (a student of Doctoral program, Language Education, year 2014/2015).

> *"Tasks that need on line translation depend on text context of the task, such as in translation lecture; it is really helpful for the students and university students, but it is better to combine it with personal ability of students and university students based on their ability and knowledge level on language that is translated hence it does not eliminate intention and meaning in the original text."*
> *Mira (*a student of Doctoral program, Language Education, year *2014).*

However, there are also informants who gave short comments and it seems that the existence of online machine translation not only include tasks or text readings in foreign languages, like what Mira/informant 5 (a student of Doctoral program, Language Education, year 2015/2016) said, From 30 informants, 80,40% of them said lecture tasks and 19,60% said that there is no correlation between lecture task; due to their uncertainty of online translation machine.

Diagram 3

Tasks translated by online machine translation

■ lecture tasks ■ others
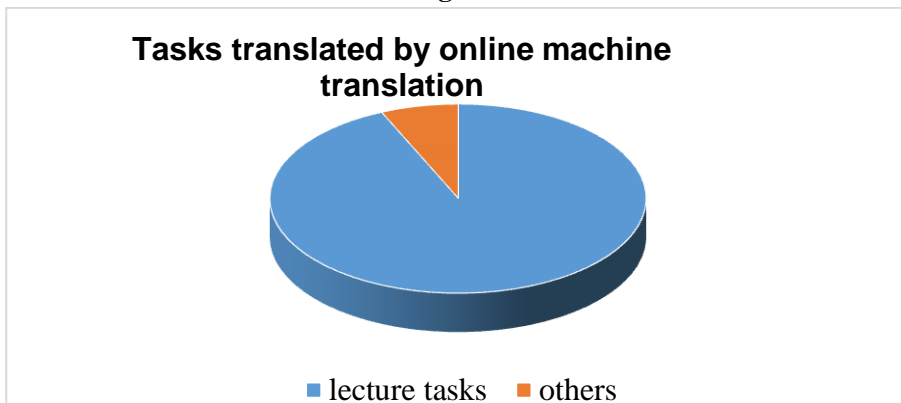
4. Online Machine Translation Process

From thirty informants, 80,10% of them gave the same opinion; click the menu of Google translate, copy paste texts that will be translated. Online translation process is easy and the result is very helpful with various texts of source language, meanwhile the remaining 19,90% informants said that they do not understand how to operate translation machine optimally.

Diagram 4

Online machine translation process

■ copy paste the texts that will be translated, click Google Translate menu
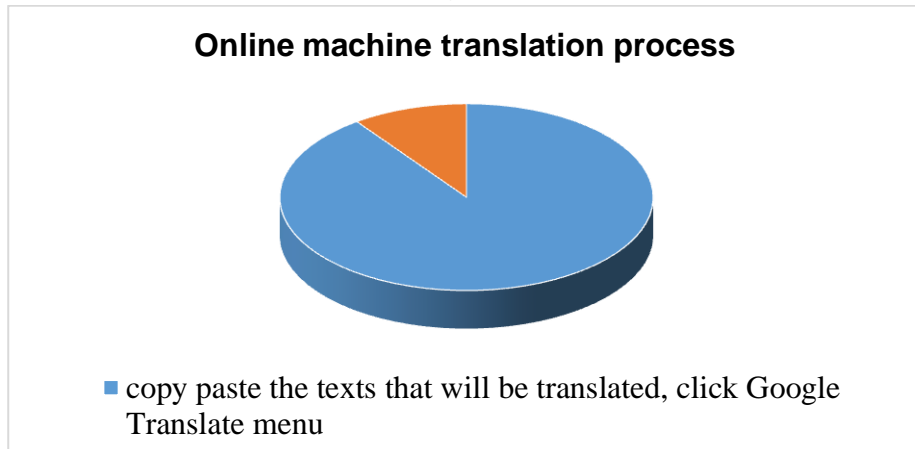
5. After online machine translation

The informants said after the online machine translation. In general, they edit, review; either in the forms of word, phrase, sentence, and paragraph in source language. Like cited from the statement of Ira Yuniati/informant 5 (a student of Doctoral program, Language Education, year 2015/2016) as follows:

> *"What needs to be done after translating using online machine paraphrasing the translation result because the translation result sometimes is not equivalent; the translation result sometimes still follows the structure of the Source Language. Therefore, it needs to be paraphrased and the translation result is still in accordance with the structure of source language. Hence, it is necessary paraphrase to be able to understand easier.*

From 30 informants, all said that after translation they conduct review, *editing*, and reread many times according to cultural context of source language. It can be seen in diagram 5.

Diagram 5

After online machine translation

■ review, edit
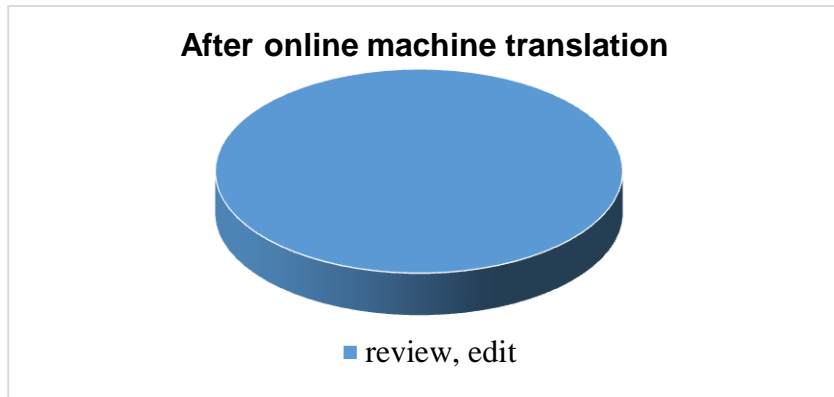
6. Equivalence Forms Used by Online Machine Translation

Zakaria/informant 6 (a student of Doctoral program, Language Education, year 2014/2015) explained, "From several online translation machines I use, mostly show translation equivalent level with the meaning in target language which is relatively close to perfect or understandable. However, for the translators who do not have any understanding regarding the content of texts translated, especially scientific text in certain fields, in my opinion, they will have some difficulties because the equivalence of what the texts that are translated may not be achieved. From 30 informants, there are 8,4% informants who stated that the equivalence on the online translation machine include word, phrase, clause, sentence, and paragraph; and 0,6% said they do not know at all.

Diagram 6

Equivalence Forms

■ Equivalence in the forms of word, phrase, clause, sentence, and paragraph
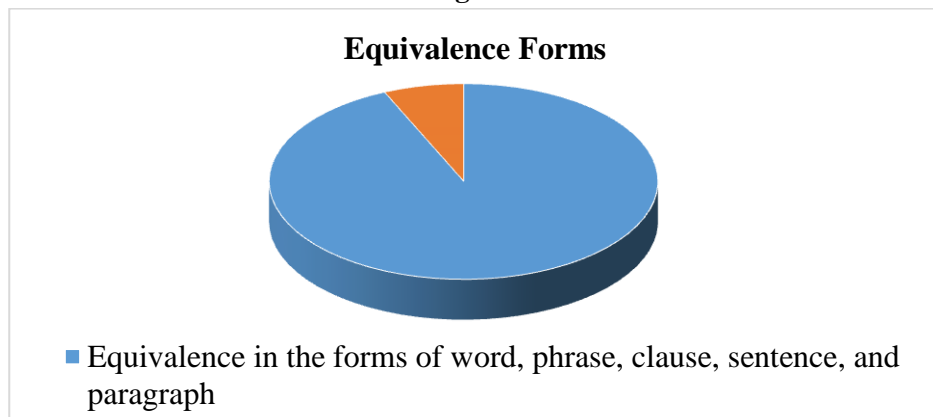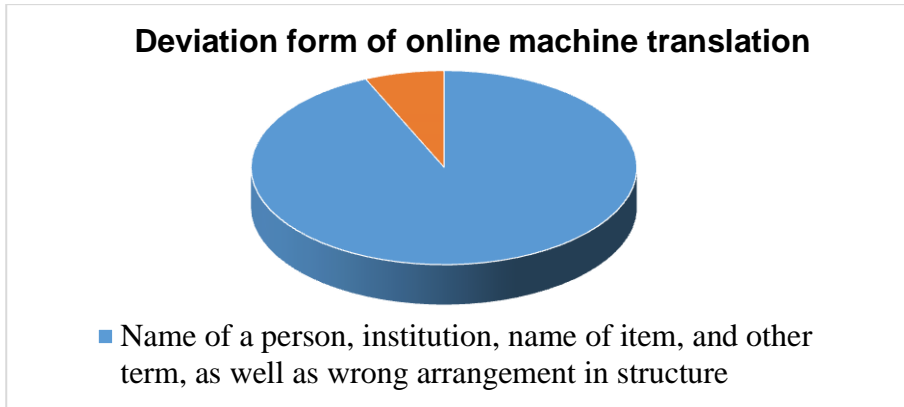
7. Deviations Occurred in *Online* Machine Translation

Zakaria/informant 7 (a Postgraduate student year 2014/2015) "Regarding this matter, because I use *Google Translate* more often than other online machine translations, hence I will disclose several matters regarding deviations occurred in online machine translation, "Google Translate". Online machine translation, such as *Google Translate*, sometimes still has deviations in equivalence forms, include name of a person, institution, name of an item, and terms from the source language

to the target language (which is resulting in nonequivalent and ambiguity in reading texts). In addition to that, sometimes the grammar is not arranged well from the source language to the target language, which is done by online machine translation."

Diagram 7

Deviation form of online machine translation

■ Name of a person, institution, name of item, and other term, as well as wrong arrangement in structure

8. Reasons Deviation Occur in Online Machine Translation

Afif/informant 8 (a student of Doctoral program, Language Education, year 2015/2016) said that the reasons there is deviation in online machine translation are cultural differences between source language and target language, as well as the scope of language discipline that is translated (a student of Doctoral program, Language Education, year 2014/2015). From 30 informants, 60.30% of them said that different structure of source language and target language becomes the reason deviations occur on online machine translation.

Diagram 8

The reasons deviations occur in online translation machine

■ Different structure pattern from the source language to the target language
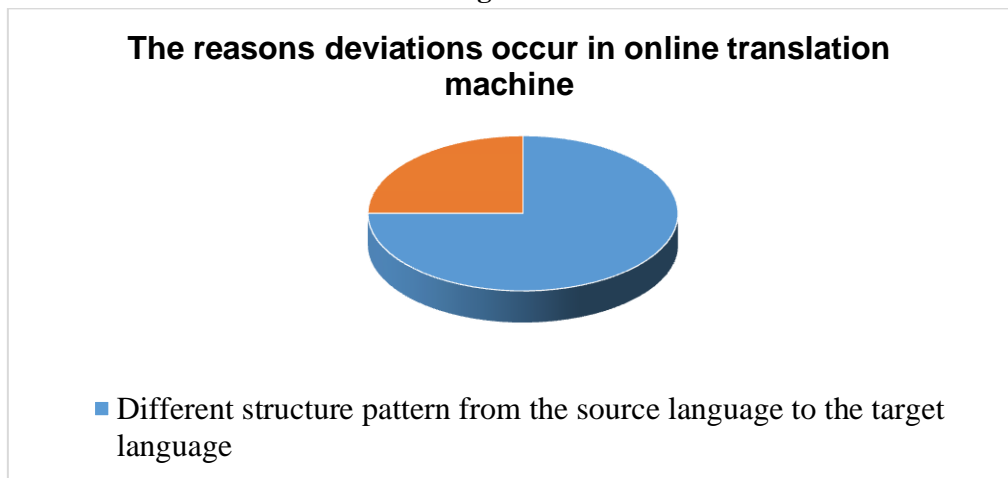
9. Strategies in doing on line Machine Translation

Theoretical strategies and main methodologies that help in conducting this research project and development in machine translation field nowadays, include: Direct Strategy, Transfer Strategy, Interlingua Strategy, Grammar and Parsing, Sub

Languages, Appearance, and Evaluation. It was also stated by Persulessy/informant 9 (a student of Doctoral program, Language Education, year 2016/2017), strategies that are used on online machine translation are literal strategy and borrowing strategy. Moreover, the same opinion was stated by informant 10. This Informant is more likely on meaning and form. In other words, this informant still uses direct strategy. From 30 informants, 70,80% of them said that they use startegies such as *direct* strategy, adaptation, transfer, and pivot strategy, the remaining 29,20% does not understand the strategy in online translation machine. It can be seen in Diagram 9.

Diagram 9

Strategies used on online machine translation

■ Theoretic strategy, direct, transfer, pivot strategy and adaptation
■ Not Understand
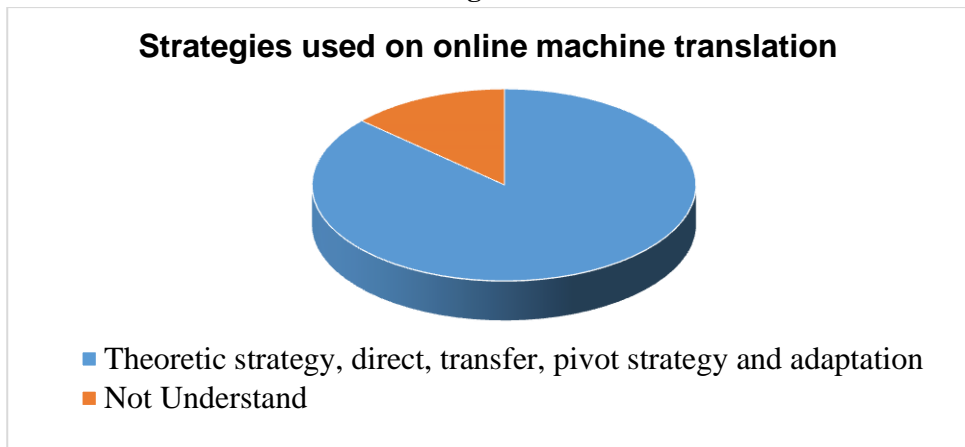
10. Lectures That Use Online Machine Translation

Dhinar explained, "The lecture that certainly explains and uses online machine translation is Language Translation and Teaching lecture in the scope of Doctoral Program of Language Education Postgraduate of State University of Jakarta. In addition to that, as a student in other lectures in Doctoral Program Language Education Postgraduate, I also need online machine translation to help me in translating reading texts from the reference books.

All 30 informants or 100% of them said that all lecture tasks are still expecting help from online machine translation. It can be seen in Diagram 10.

Diagram 10

Lectures that use online machine translation

■ All lectures, especially Translation
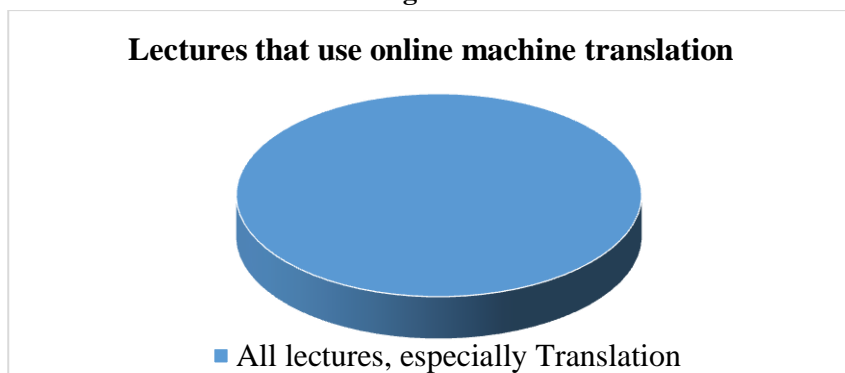
CONCLUSION

Based on the findings and discussion, online machine translation has several sub focuses. Hence, it can be concluded as follows:

The use of online translation machine is due to limited vocabularies that the users have. In addition to that, it is easier, faster, and more efficient in saving time, especially texts that are translated in various forms, either hard copy or soft copy (e-book). Moreover, many lecture tasks use foreign languages and contain terms that are difficult to be translated. The translation process is done by using words or copy pasting the sentences that will be translated, then it will be translated automatically by translation machine. To get the most optimal result, the results should be edited, revised and corrected many times hence the sentences that are translated have equivalence literally and in meaning; literal equivalence, meaning equivalence, and form equivalence.

Translation mistake happens when there is inaccuracy in equivalence. The cause is the cultural differences between source language and target language and the scope of language discipline that is translated, while the finding in the strategies is literal translation.

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