Chapter Two

Literature Review

This chapter consists of relevant theories to support this study. The theories help to shape researcher' and reader' understanding about the topic of the study. This chapter also provides related studies previously conducted by other researchers to give an insight about how some past studies with related topic were conducted and how this study will be different from those study. By the end of this chapter, conceptual framework is presented to correlate the theory into the interest of this study

Theories Related to Online Machine Translation

Definition of machine translation. Machine translation, often abbreviated as MT, now becomes one of the oldest computer application, and the field has become a notable interest to be investigated by researchers (Chéragui, 2012). Its idea was originated from universal language and mechanical dictionaries by Rene Descartes and then was put into a memorandum by Warren Weaver and Andrew Booth which became the initial stimulant of its development (Hutchins, 2007; Yanishevsky, 2009). From that moment on, MT' development has gone through meteoric rise and fall until it reaches its current state. Later, the invention of the internet allowed MT to be installed on web and is currently known as online machine translation (OMT) or web-based machine translation (WBMT). The example of currently available OMT tools on the internet are Google Translate, Bing Translator, Babelfish, and Freetranslation. From those aforementioned OMTs, Google Translate provides most reliable translation than

any other OMT tools (Kadhim, Habeeb, Sapar, Hussin, & Abdullah, 2013; Arenas, 2010). This was also experimented by Hampshire and Salvia (2010) who evaluated the performance and quality of some OMT tools and the result showed that Google Translate' translation quality was ranked first among another OMT tools.

Some researchers have their-own-but-similar definition of MT. Basically, MT is defined as a computer application which is able to transform a text in one human language into another automatically (Lin & Chien, 2009; Lovez, 2008; Okpor, 2014). Although MT is now installed on web and known by different terminologies such as online machine translation (OMT), free online machine translation (FOMT), and web-based machine translation (WBMT), some researchers use term "MT" to generally refer machine translation, be it online or not. In this study, term "MT" refers to machine translation in general, while "OMT" specifically refers to online available machine translation. Furthermore, the terms "MT" and "OMT" will be followed by word "tool" to make it clear that the terms refer to a "machine" and not a "translation product of a machine".

The advantages of OMT tool. The increasing number of information exchange activities across regions either through direct or virtual communication has led to an escalation demand of translation (Okpor, 2014). Under this circumstance, the role of OMT tool as a supporting media of cross-language communication process is being more amplified. Thus, the trend of OMT tool use is rising up as well. As Chéragui (2012) noted, in 2008, the ratio of the internet

users who had used OMT tool and had a plan to use it was 23% : 40%, and the number increased up to 28% : 50% in 2010.

Behind the popularity of OMT tool, there are some advantages that make it becomes a preferably chosen translation media by its users. Firstly, OMT tool features real-time translation. Rapid translation process provided by OMT tool is undisputed. It is capable to translate a text at one-click speed. Susanto (2013) experimented on the speed of OMT tool' translation and identified that for translating 25-words-sentences, Google Translate only needs 1.1 seconds and 1.7 seconds for Bing translator. The feature of real-time translation makes OMT tool to be really time-saving in translation works (Lin & Chien, 2009). Secondly, many OMT tools are available for free.The user may use OMT tool to translate a word, sentence, paragraph, or even whole document, and it is free. Thirdly, OMT tool has simple and friendly user interface (Jolley & Maimone, 2015). The researcher observed that most of popular OMT tools simply consist of input and output textbox, one "translate" button, and pop-up menu to select source and target language to be performed. They also provide clear instructions on how to use them. Fourth, some OMT tools have speech recognition and text-to-speech features. These features are helpful to attest user pronunciation, and provide them the correct pronunciation of a word. Moreover, users can also use these features for listening and speaking practice. Lastly, OMT tools are now available on the internet and are accessible by its user anywhere and anytime as long as there is a good internet connection.

The weaknesses of OMT tool. While there are some advantages offered by OMT tool, it is not a perfect tool for translation yet. The complexity of language poses some problems which hamper OMT tool to gain perfect accuracy of its translation. Two main problems as proposed by Tripathi and Sharkel (2010) are literal translation and grammar inaccuracy. OMT tool usually translates text literally, which is either 'structure-preserving' or 'word by word' translation. Consequently, there are some inappropriate words selections and words order errors. Moreover, since OMT tool is unable to take cultural references into account unless it is previously identified and entered into its systems, idiomatic expression error is often to be found in its translation (Niño, 2009). In terms of grammar inaccuracy, this problem is caused by lack of grammar universality. There are some grammar elements that exist in one language but do not exist in another language (Tripathi & Sharkhel, 2010), so that when those elements are translated, OMT tool cannot find equal terms in the target language or they are misinterpreted as common words with different meanings.

The editing process of OMT tool' translation. By considering its weaknesses, users can not expect as much as a high accuracy translation by relying all translation work on OMT tool. There is a need of human intervention either before or after the translation process (Hutchins, 2007). Thus, editing process of OMT tool' translation is a must-be-done process by the users in order to achieve better quality translation.

There are two options avaliable in doing editing process, either do it before the source text is translated (pre-editing), or after it is translated (post-

editing) (Doherty & Gaspari, 2013). Pre-editing is a process to modify source text after identifying the problems that are contained in the input text before it is being translated. Some studies (Babych, Hartlye, & Sharoff, 2009; Temnikova, 2010; Gerlach, Porro, Bouillon, & Lehmann, 2013) had been conducted researches to examine the benefit of pre-editing process. Pre-editing process in those researches was done by replacing informal or colloquial words with more general ones, restructuring sentences from complex structured into simpler ones, handling discontinuous multiword expressions, placing punctuation at the right place, and dealing with idiomatic expressions. The results of those researches proved that pre-editing process significantly increased the result of OMT tool' translation quality, and it reduced times and efforts in doing post-editing (Babych et al., 2009; Temnikova, 2010; Gerlach et al., 2013).

Unlike pre-editing process which is done before the translation process takes place, post-editing involves the correction of raw OMT tool' translation to achieve higher degree of quality and acceptable translation (Martínez, 2003). Niño (2008) argued that post-editing is helpful to provide more accuracy, fluidity, and confidence in foreign language production. Niño further argued that post-editing is also useful to increase user' awareness on the error as well as increase their error correction skill by conducting revision on the translation error.

As to assist OMT tool in translation work, the user should have some requirements. Those requirements include having experiences in the process, knowledge of the content, familiarity with the language pair, and knowledge of specific OMT tool system (Doherty & Gaspari, 2013). If user fail to meet the

requirements, there will be no guarantee that the edited translation will get any better than the raw translation of OMT tool.

The use of OMT tool in language learning. Somers (2001) stated there are three different concerns that prompted the use of MT tool and related translation application in the classroom. Firstly, MT tool is used in teaching and learning about computers and translation courses. Secondly, MT tool is used in teaching translator and another professional linguist about translation software. Thirdly, MT tool is used in language teaching and learning. The last concern will be the pinned-down point in this section.

MT tool now is one of substantial tools in learning because it can serve as a technology assistance in the process of teaching and learning. Arenas (2010) believed that MT tool helps language and translation teachers and students in their language teaching and learning. It also involves teaching and learning strategies (García, 2010) as it encompasses some alternatives activities which can be applied in the classroom. In this regard, it is suggested that there is a need for integrating MT tool in foreign language learning curricula (Somers, 2001). The integration of MT tool in language learning curriculum is not only as an effort of modernizing language teaching and learning, but also to assisst language learners in proper utilization of modern technology in language learning.

Researchers proposed some uses of OMT tool in which it can be helpful and beneficial for language learning. Some of these uses below are only a few examples of how OMT tool can be used by students. However, these examples has already been proven to be significantly practical and beneficial by some

researches (Kliffer, 2005; Gaspari, 2006; Niño, 2009; Case, 2010; García, 2010; Clifford et al., 2013; Kadhim et al., 2013; Koponen & Salmi, 2015).

OMT tool use for vocabulary reference and acquisition. In this regard, OMT tool has the same role as traditional dictionary. OMT tool, as Niño (2009) stated, is doing well in translating individual words. OMT tool can be where students look up for the meaning of a word they do not understand. Not only they find the meaning, they will also find alternative translation or synonyms of those words and other related terms. Therefore, as they are being exposed, their vocabulary storage is enriched (Clifford et al., 2013).

Niño (2009) stated that vocabulary reference, along with reading comprehension, is the most popular use of OMT by students. Which means that students use OMT tool for this purpose more frequently than any other purposes. Since they frequently use OMT tool for this purpose, they will also encounter new vocabularies more often, so they are more likely to acquire those new vocabularies. Improving vocabulary mastery will be beneficial for students either in reception and production skills. They will have more option in vocabulary choices to be used in their written and spoken production, and they will also have better understanding of an utterance in listening, and comprehension in reading.

OMT tool for reading comprehension. Students often find unfamiliar words, terms, expressions, and phrase in their reading which consequently make them less understand about what they are reading. In this case, they can use OMT to help them translating some elements of the text they do not understand. In a case where they have a real struggle in understanding most of the text, they can

translate the whole text into their L1 so it can help them to get a summary or basic of what the information is all about in a form of a draft translated text (Kadhim et al., 2013; Koponen & Salmi, 2015).

In regard to the use of OMT tool in reading comprehension, students may not concerned about its translation quality. Even complex contents in foreign languages can be comprehended at ease, especially by students who only want to know the basic idea of a text (Lien & Chien, 2009). Hutchins (2009) defined this kind of user as 'ocasional translator'. Since the objective is to comprehend the information, even not-so-acurate translation can 'boost' students' level of confidence about the information (Gaspari, 2006).

OMT tool use for assisting writing. García (2010) in an experimental study found out that students who used OMT tool in writing got a better mark, did less pausing while writing, and produced more words than of those who wrote directly into L2. OMT tool facilitates students in writing a draft and outlining their ideas. It helps less proficient students who are struggling to write in L2 on their own and it less time consuming rather than to write directly in to L2 (García, 2010; Case, 2010). The example of OMT tool usage in writing is that it can help students to communicate more actively in an online class and a group discussion, or another form of learning activity which requires a good written communication in order to be able to participate actively. OMT tool, therefore, can improve students' confidence, especially for less proficience students' in their EFL writing (Niño, 2009).

Not only assists students in their writing, OMT tool is helpful in improving students' writing skills as well. Considering the fact that OMT tool sometimes produces errors in its translation, and since to revise those error also involves writing skill, Niño (2008) suggested that doing editing process of OMT tool' translation error can enhance students' writing skill.

OMT tool use for translation drilling. According to Niño (2008), despite its poor result, OMT tool' translation can be used to measure students' knowledge about target language as well as broaden their language and translation skills. In translation task, students sometimes use OMT tool to provide them a draft translation. This raw translation serves as an example and stimulates students to learn from any translation errors. As they do correcting and upgrading the raw translation, they improve their error identification and correction skills.

The process of pre- and post-editing will give students insight of some fundamental properties of human languages and improve students' awareness of how complex translation and language are (Kliffer, 2005). This experience will give students an opportunity to identify grammar, vocabulary, word order, and others language points difference between source and target language which consequently enhance their language knowledge. Furthermore, Belam (2003) believed that students can learn new grammar points and stylistic aspect from OMT tool by doing post-editing.

Review of Related Studies

There are several studies related to the topic of MT tool use and perception among foreign language learners and instructor. The two of those studies will be reviewed below.

The first study was conducted by Clifford et al. in 2013 entitled *"Surveying the Landscape: What is the Role of Machine Translation in Language Learning."* The study was to investigate the use of MT tool at Duke University among undergraduate students of Spanish, French, Italian, and Portuguese program, as well as the view of students and instructors towards its usefulness.

Related to the use of MT tool, the result outlined some points. The first point is that in the overall usage 77% of the students used OMT tool to support their learning, and Google Translate was the mostly used OMT tool (used by 81% of the students). The second point is that there were three practices that students did in using OMT tool in English – target language translation, namely: writing editing (54%), pre-writing (42%), and writing (40%). On the other hand, there were four practices in target language – English translation which students used OMT tool for, namely: reading a text (60%), understanding instruction (55%), double-checking writing (51%), and understanding audio or video tape (14%).

In terms of students perception on the use of OMT tool, there were six benefits found to be useful for, namely: increasing vocabulary (85%), increasing grammatical accuracy (47%), saving time (45%), increasing confidence (32%), improving grade (29%), and producing native-like language (18%). In overall perception about the accuracy and usefulness of OMT tool, students believed that OMT tools are somewhat accurate and useful for their language learning.

However, the instructors believed that OMT tool can only be useful in an advanced level of language learning process, and most of them disapproved its utilization by their students.

The second study was conducted by Jolley and Maimone in 2015, entitled *"Free Online Machine Translation: Use and Perception by Spanish Students and Instructors."* Students and instructors of Spanish from five U.S universities were surveyed to examine the use of Google Translate and similar OMT tool and their beliefs regarding to the quality of OMT tool' translation, the ethic of its use, and its implication for foreign language teaching and learning. In terms of overall frequency, the result showed that the majority students (97.66%) used OMT tool. Students mostly used it in their writing assignment (85.16%) (the use of OMT tool by assignment type), verifying hunches (70.31%) (the use of OMT tool by purpose), and translating individual word (65.08%) (the use of OMT tool by the length of text).

Regarding with the quality, the instructors judged that the quality of OMT tool translation, such as Google translate, is somewhat accurate (higher than 64.1% accuracy). As for the ethical issues, both students and instructors had a common belief that OMT tool use can either be ethical or unethical depends on how the users use it. The length of translation segment significantly affected their ethical judgment of OMT tool use. Further, the majority of both groups agreed that the use of OMT tool has positive impact towards language learning process.

Those aforementioned studies had two similar focuses, the use of OMT tool and the view towards its usage in language learning. The results from both

studies were also similar, except one distinct point regarding to the instructors'

view towards OMT tool use by their students. In the first study, the instructors

personally disapproved OMT tool use by their students, while believing that it is

only useful in an advanced language learning process. On the other hand, the

instructors' view in the second study believed that OMT tool provide positive

impacts toward students' language learning.

This study, however, will be different from those aforementioned studies

in two main ways. First, instead of examining instructors' perception on the use of

MT tool, this study only focuses on students' perception. Second, the setting and

the subject of this study will be students of English program enrolling in the first

year of university (second semester) at EED of UMY who are new to such

intensive English learning.

Conceptual Framework

It is now obvious that technology can play an important role in language

learning. OMT tool is one of a modern technology for translation task has been

proved to be useful, not only to ease people in translation task but also in another

way beyond its practicality which involve knowledge and awareness of language.

Some of those benefits, like already explained, are the benefit in enhancing

vocabulary mastery and improving writing skill. The fact that OMT tool is also

popular among language learners implies that they are more likely to be exposed

by some of those OMT tool' language-related benefit. Aware of this

circumstances, some of researchers promote the integration of OMT tool in

language learning curricula.

This study, therefore, is interested to investigate whether or not language learner use OMT tool to help them in their learning. Furthermore, this study also try to examine the benefit that they gain by using OMT tool in their learning.

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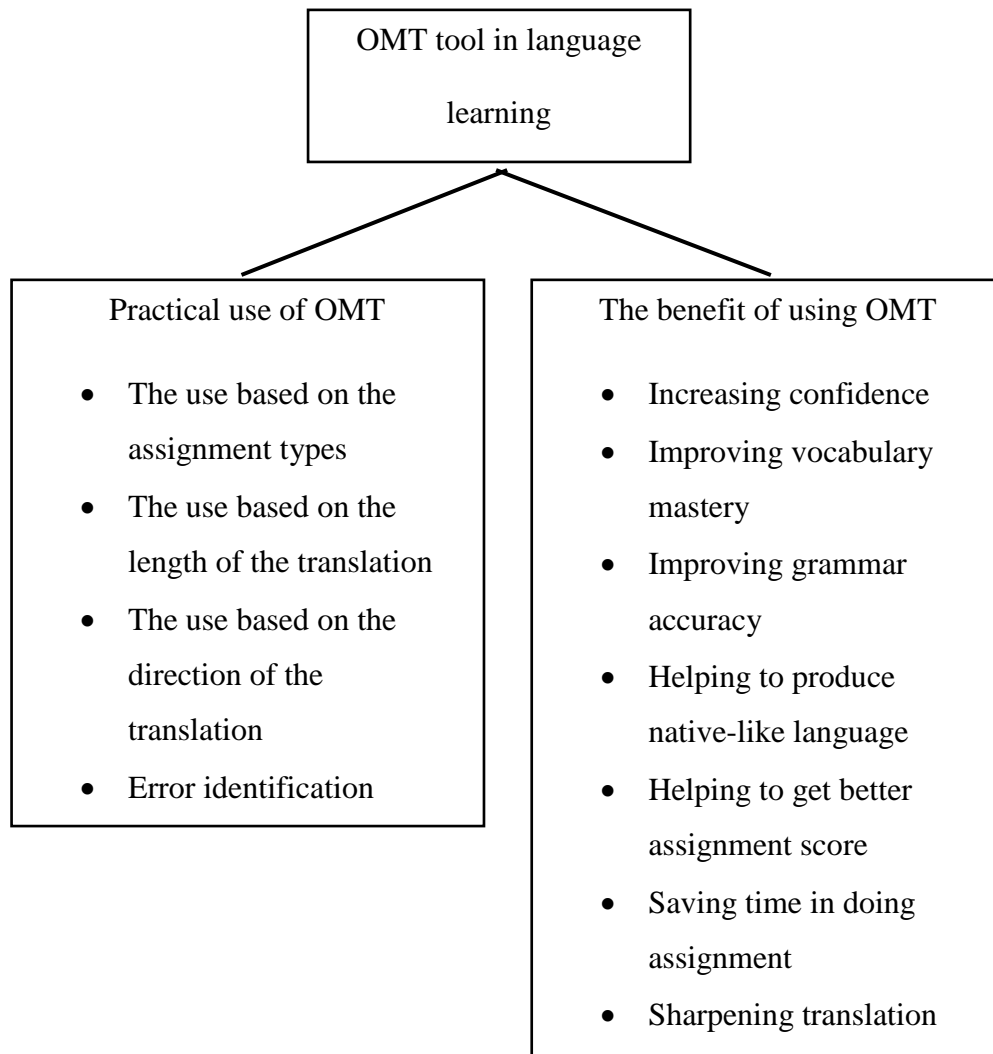| Practical use of OMT	The benefit of using OMT
• The use based on the assignment types • The use based on the length of the translation • The use based on the direction of the translation • Error identification	• Increasing confidence • Improving vocabulary mastery • Improving grammar accuracy • Helping to produce native-like language • Helping to get better assignment score • Saving time in doing assignment • Sharpening translation

Figure 1. *Conceptual Framework of OMT tool in language learning*