



Online Resources Management in Self-Corrections and Translation Quality

Rudy Sofyan^{a*}, Bahagia Tarigan^b

^{a,b}*Linguistics Department, University of Sumatera Utara, Medan 20155, Indonesia*

^a*Email: rudy_sofyan@yahoo.com*

^b*Email: bahagiatarigan@yahoo.com*

Abstract

In this advanced technology era, the use of technology in translation becomes more and more obvious which may, in turn, change the role of the translators. Printed resources have been gradually replaced by online resources; nevertheless, using online resources can be time consuming if managed inappropriately. This is a research-based article aiming at finding out how the student translators manage online resources in solving translation problems while translating the texts from English into Bahasa Indonesia. The research uses a qualitative method taking three students of Master Degree Program of Linguistics Department majoring translation studies at the University of Sumatera Utara without any professional experience on translation business as the research participants. They were asked to translate two texts from English language into Bahasa Indonesia. The data were the translation process and the translated texts produced by the student translators. Translog and Camtasia Studio 8 were used in collecting the data. The findings of the research show that (i) the student translators used online resources to solve the translation problems in terms of terminology and structure, and (ii) a good online resources management in doing self-corrections results in a good translation quality. The research findings suggest the involvement of online resources in translation process.

Keywords: Camtasia Studio 8; online resources; self-corrections; student translators; Translog.

* Corresponding author.

1. Introduction

Recently, the use of technology in translation process is unavoidable. The use of machine translation (MT) has been common in translation practices. The widespread use of such technological advance has changed the role of the translators as they turn to become post-editors. They will no longer start the translation process with pre-drafting and drafting phases; instead, they will let the machine do those phases. In post-drafting, they will only edit the translation draft that has been provided by the machine [20: 209]. In relation to the issue of post-editor, [9: 164-165] says that translators will apply the criteria of controlled language and work with special language domains. Nevertheless, machine will always remain a machine that can never change the role of human in the whole translation process. Reference [21: 3] argue that current MT systems are still not perfect because the output from these systems needs to be edited to correct errors. This idea strengthens a very important role of human in translation, particularly in correcting or revising a translation draft. This idea implies that a translator must have capability of editing the draft by him/herself. Such process is known as self-correction. Reference [3: 150] defines self-corrections as instances in which the translator makes an addition, a deletion, or a change to the text. Therefore, the core idea of self-correction is making a change to the text done by the translator him/herself while doing translation. In doing self-corrections, a translator needs a help for the translation draft improvement such as dictionaries, related books, online resources, etc. As technology develops, the use of printed dictionaries has been gradually left because online resources provide all what a translator needs to self-correct his/her translation draft. Consequently, a translator should be skilled in choosing the right online resources for the right translation problems. Such skill is known as online resources management about which many studies have been conducted. Reference [20: 212] found that the student translator with a good online resources management produced a better quality of translation. A good management does not always correlate with the length of time spent by a translator which means that using online resources does not need more time consumption in doing self-corrections. Reference [15: 201] reported that more than half of her research participants (60%) stated that they had enough time to perform the Internet searches. This finding emphasizes the incomparability of using various online resources to time consumption because this is, purely, a matter of management supported by a good knowledge on using online resources in translation. Several previous studies conducted explored the types, frequency, or linearity of self-corrections done by either professional or student translators (cf. [15;9;20]). This article, particularly, explores how student translators manage the online resources for every translation problem they encounter in doing self-corrections and how online resources management contributes to the translation quality.

2. Review of Related Theories

2.1. Self-Correction in Translation Process

Self-correction is a kind of revision taking place in translation process. Following Robert [13: 5], the term 'revision' refers either to the process of revising one's own translation, or to the process of revising somebody else's translation. Therefore, self-correction in translation process can be defined as a process of giving correction or revision done by the translator him/herself while translating a certain text [16;3;17;4;20]. Self-corrections can be classified into several types. Reference [3: 153] categorizes self-corrections as (i) self-corrections to grammar, (ii) self-corrections of meaning, and (iii) instances in which the student typed a word or

phrase, deleted it, and retyped it. Furthermore, [20: 137-138] elaborates Malkiel's categorization of self-corrections by grouping them into 8 categories: (i) word deletion, (ii) word substitution, (iii) spelling correction, (iv) return, (v) word addition, (vi) meaning correction, (vii) capitalization, and (viii) grammar correction. Self-correction must not always be done orderly; in other words, it should not always follow the three stages/phases of translation process as proposed by [1,4] including pre-drafting (start-up), drafting (writing phase), and post-drafting (revision). [19] explore the different distribution of the self-revision phases throughout the translation activity. Two different approaches were identified, with writing, researching and revising tasks taking place during all three phases of pre-drafting, drafting and post-drafting. Some of the participants did most of their self-revision as they wrote their drafts, leaving little work to be done at the post-drafting phase; that is, they preferred to evaluate and make possible changes in their translation at the beginning of their translation activity. And some of the participants decided to leave most part of the revision after they drafted the translation, by writing their draft as quickly as they could; that is, they decided to self-revise their translation once the whole text had been completely translated.

In addition, [15: 196] identified three categories or methods of doing self-corrections. The methods include: (1) Linear, whereby participants start translating from the title and proceed in a linear fashion until the end of the translation phase; (2) Inline, including cases where participants turn back to modify their translation but horizontally, i.e. at line level. The physical line of the text on screen was set rather arbitrarily as a limit on the assumption that participants would stick to modifications on or close to the same translation unit, as they perceived it. Since participants were not good typists it was assumed they would use the keyboard "arrows" for inline revisions and the mouse for revisions falling in the third category, even if that meant a sentence spreading over two lines, thereby wasting time. The line level was also seen as a convenient compromise between the first and the third category; and (3) Multidirectional or non-linear, for example where participants leave the title for the end, translate a few lines and then start again from the beginning, or jump to a second paragraph. etc. Multidirectional work methods only include modifications beyond line level.

2.2. Online Resource Management in Translation Process

In translation process, the translators need a help for the purpose of translation improvement. Such help can be either printed resources – dictionaries, books, etc. – or online resources or both. The different types of support or help used by translators in the course of the translation process have been investigated in many respects. Reference [7] proposes the categories of internal and external support as a way of differentiating between two types of strategies employed by translators, i.e., those which rely on the translators' personal worldview (internal support), such as the translator's encyclopedic knowledge, and those which draw on documentation sources (external support), such as dictionaries, reference materials, online resources, etc. As technology develops, the use of online resources is more preferable for its efficiency, effectiveness, and practicality. Reference [14: 33] argues that the internet has a much more profound impact on translation in terms of the way it is carried out and the tools that are used as well as the industry that has developed around it. The internet is an online service provider through which translators can access various services assisting them in the translation process. Furthermore, the use of the internet leads translators to look for ways to cope with technology development and to look for more practical techniques that enable them to translate more and waste less [12:

30]. Besides, globalization and technology are very helpful to translators in that translators have more access to online information, such as dictionaries of lesser-known languages.

In addition, in her research, [15] found that the management of online resources helped the translators translate their texts more quickly. Internet provides limitless number of websites that can be used as online resources assisting the translation process. Reference [15: 204] classifies the online resources into four broad categories: (i) encyclopedias, (ii) general bilingual online dictionaries, (iii) specialized bilingual dictionaries, and (iv) portals offering free machine translation services. In a more detailed manner, [20: 196] lists the websites of online resources visited by the student translators in the whole process of translation as shown in Table 1.

Table 1: Online resources used by student translators

Online Resources		
Pre-drafting	Drafting	Post-drafting
Blog; News	Google Translate	Google Search; Wikipedia; Google Translate; reference.com; idiomatic online dictionary; kbbi.web.id; kamusbahasainggris.com; thefreedictionary.com; dictionary.cambridge.org.; kbbi.web.id; badanbahasa kemedikbud.go.id; e-tutorial. dgip.go.id;

In fact, a good management of online resources is not only needed by student translators, professional translators need them as well. In their study, [8: 208] concluded that translation technology does change the way professional translators behave and optimizes sources of external support. Translation technology also optimizes online orientation processes. This means that online resources are very helpful in supporting the quality of translation products. The main purpose of using online resources in self-correcting is to solve the translation problems encountered by the translators during the translation process. [6: 105] mention three major problems in translation process that include (i) problems of ambiguity, (ii) problems that arise from structural and lexical differences between languages and (iii) problems of multiword units like idioms and collocations.

3. Research Methodology

This is a qualitative research as suggested by [2]. Three students of Master Degree Program of Linguistics Department majoring translation studies at the University of Sumatera Utara without any professional experience on translation business were taken as the research participants. In this research, they were called student translators (Student A, B, and C). The data of this research were the translation processes done by the student translators who were asked to translate two texts from English into Bahasa Indonesia, i.e. “Almost 1,800 People Have Died in Seven Weeks in the Philippines’ War on Drugs” downloaded from <http://time.com/4462382/philippines-duterte-1800-killed-drug-war/> and “Samsung Planning to Sell Refurbished Smartphones” downloaded from <http://time.com/4461041/samsung-planning-to-sell-refurbished-smartphones/>.

The translation process was conducted in a room that was designed as closely as possible to the real work circumstance of a translator. Each of the laptops provided had been installed Translog-II and screen recording software (Camtasia Studio 8). The student translators were given enough time to learn and ask questions on how to work using the Translog-II program. Besides, each of the laptops was connected to internet for online activities. In order not to be bothered by the signal problems, the internet access was connected through a cable at 100mbps speed. The data obtained from the Translog and Camtasia were analyzed to find out how the student translators solved their problems during the translation process. The analysis particularly focused on how they managed online resources in solving certain translation problems. The quality of the translation was assessed by two raters using a scoring rubric developed under the suggestions of [10,11,5] as provided in Table 2.

Table 2: Scoring rubric used in assessing the translation quality

No.	Criteria	Evaluated Aspects	Score Range
1.	Accuracy	Problems of comprehension, omissions or additions to the ST message	0-30
2.	Equivalence	Diction, naturalness of the equivalence	0-25
3.	Translation Problem Solving	Creativity in finding solution to translation problems, use of online resources	0-20
4.	Grammar	Fluency in grammar, interference of SL structure	0-15
5.	Textual flow	Use of parallel structure, fragment or run-ons sentence	0-10

Then, the analysis would be about whether using online resources in self-corrections would contribute to the quality of the student translators' translated texts.

4. Findings and Discussions

Based on the data analysis, it was found that the use of online resources in doing self-corrections was intended to solve the student translators' problems that can be grouped into two major categories, i.e. terminology and structure. They visited various websites to find out the right online resources for the right translation problems. The findings related to how the student translators managed to solve their translation problems by the help of online resources are summarized in Table 3.

Terminology was the element of translation which was frequently self-corrected by the student translators for its different meaning in different contexts. On average, the student translators self-corrected the terminology of the terms which were not commonly used in the texts of the TL. Two main problems encountered by the student translators relating to finding the equivalent of the ST terminology were idioms and collocations. Idioms become the problem of translation because their meaning cannot be completely understood from the meanings of the component parts. It is true that the meaning of most of the words can be guessed from the context and from their word part; nevertheless, in the terms of idioms, this skill does not work. Therefore, the student

translators need to master online resources management skill.

Table 3: The online resources used in doing self-corrections

Student Translator	Websites Visited to solve the translation problems in terms of					
	Terminology		Collocation		Structure	
	Idiom					
Student A	Google Terjemahan, Kamus Lengkap Online, Urban dictionary.com		Google Terjemahan, Kamus Persamaan Kata, Urban dictionary.com		Harian Kompas, VOA, Info Komputer, begawei.com	
Student B	Merriam-Webster, TheFreeDictionary, Kata, Persamaan Kata	wikipedia, Sinonim	Merriam-Webster, Persamaan Kata, Pengembangan dan Pembinaan Bahasa		Kamus KBBI, Kajian Pustaka, Badan Pengembangan dan Pembinaan Bahasa	
Student C	Google Terjemahan, Merriam-Webster, TheFreeDictionary, Blog kamus idiom, dictionary.com, Persamaan Kata		Kata Baku, Persamaan Kata, dictionary.com, Badan Pengembangan dan Pembinaan Bahasa		Gema Nusantara, Kajian Pustaka, Info Komputer, Badan Pengembangan dan Pembinaan Bahasa	

The websites visited by the student translators can be grouped into eight broad categories as presented in Table 4.

Table 4: Scoring rubric used in assessing the translation quality

Website	Category
Wikipedia, Kajian Pustaka	Encyclopedias
TheFreeDictionary, dictionary.com, Urban dictionary, Kamus KBBI	General monolingual online dictionaries
Merriam-Webster, Kata Baku	Specialized monolingual online dictionaries
Kamus Lengkap Online	General bilingual online dictionaries
Blog kamus idiom, Persamaan Kata, Sinonim Kata	Specialized bilingual online dictionaries
Google Terjemahan	Free machine translation services
Harian Kompas, VOA, Info Komputer, begawei.com, Gema Nusantara	Online news
Badan Pengembangan dan Pembinaan Bahasa	National agency of language development and construction

Various websites were visited to get the terminology equivalence in both ST and TT because inappropriate translation of the terminology would give significant effect to the translation leading to the TL readers' misunderstanding. In self-correcting the idiom equivalence, they visited Merriam-Webster (www.merriam-

webster.com/), TheFreeDictionary (idioms.thefreedictionary.com), Google Terjemahan (<https://translate.google.co.id/>), Kamus Lengkap Online (kamuslengkap.com), Wikipedia (<https://id.wikipedia.org>) Sinonim Kata (www.sinonimkata.com), Persamaan Kata (www.persamaankata.com), blog (kamusidiom.blogspot.co.id), Kata Baku (<http://www.katabaku.com>) dictionary.com (www.dictionary.com), Urban dictionary (www.urbandictionary.com), and Badan Pengembangan dan Pembinaan Bahasa, the Ministry of Education and Culture (<http://badanbahasa.kemdikbud.go.id>).

One of the problems faced by the student translators was when they translated the word 'landslide' literally translated into the TL as '*tanah longsor*' (a kind of natural disaster). They provided different TT equivalents for the term: Student A wrote '*didukung banyak warganya* (supported by many people)', Student B wrote '*dengan jumlah suara yang besar* (with a large number of votes)', and Student C wrote '*telak* (overwhelming victory)'. The first equivalent (*didukung banyak warganya*) was chosen based on the Student A's understanding of the clause in which it was used "The 71-year-old was elected by a landslide". The context of presidential election leads him to the conclusion that the president had been supported by many people. The Student B's equivalent (*dengan jumlah suara yang besar*) was chosen after she visited a Merriam-Webster site providing two possible meanings for the term and one of which was 'an election in which a particular victorious candidate or party receives an overwhelming mass or majority of votes' which became her reference in deciding the equivalent. Meanwhile, Student C had visited two websites (i.e. a Merriam-Webster site and a dictionary.com site) before she made the decision. In those websites, she found four possible meanings for the term and she finally decided to use 'overwhelming victory' as the equivalent of 'landslide'.

In addition, the student translators also encountered the problem of finding the equivalent for the word 'high-end'. Two of them (Student A and B) decided to keep the ST word in their TTs, meaning that they did not translate it into the TL. On the other hand, Student C wrote '*mutakhir* (sophisticated)' as the equivalent of the term. She had visited three different sites (Merriam-Webster, dictionary.com, TheFreeDictionary) before she finally decided to choose '*mutakhir*' as the right equivalent for the term. In TheFreeDictionary site, she found that 'high-end' means 'sophisticated and discerning'. This finding emphasizes a very important role of a good online resources management skill in translation process.

Another problem is related to finding the right collocation which is always the problem not only for student translators but also for professional translators. The collocation problem encountered by the student translators was mostly about the collocation of verb and preposition (grammatical collocation). In the SL, the verb 'care' may collocate the preposition 'about', but such collocation does not apply in the TL. For example, the ST clause 'he doesn't care about human rights' was translated '*dia tidak peduli tentang HAM*' by two of the student translators considering that 'about' literally means '*tentang*'. This collocation was chosen as a result of an interference of the SL structure as they did not have good ability to use online resources to find the right collocation in the TL. Meanwhile, Student C preferred to use '*dengan*' as the collocation of the verb. She found this collocation after visiting the *Kata Baku* site providing some possible collocations of the verb '*peduli*'. According to this site, the verb '*peduli*' collocates with several prepositions including '*dengan*', '*terhadap*', '*pada*', and '*sesama*'. This is another evidence of the important role of having a good online resources management in doing self-corrections. *Kata Baku* is a website serving as the center of the standard word and the

correct word of Bahasa Indonesia with a reference to *KBBI* (a Monolingual Dictionary of Bahasa Indonesia).

The problem of collocation encountered by the student translators also involved lexical collocation. Student A and C wrote '*harga lebih rendah*' as the equivalent of ST phrase 'lower price'. In this context, the function of '*lebih rendah*' was as the modifier of the phrase core '*harga*'. Literally, the ST word 'lower' is translated '*lebih rendah*'; however, by considering the word to which it collocated 'price', the TT word '*lebih rendah*' was not the appropriate equivalent. In the TL, the word '*harga*' collocates the words either '*murah*' or '*mahal*', and in this context, as 'low' means 'cheap', the word '*murah*' is the right diction. Such diction was used by another student translator, Student B, when she self-corrected her draft '*harga lebih rendah*' by visiting the *Badan Pengembangan dan Pembinaan Bahasa* website. In that website, she found that the word '*harga*' did not collocate with '*rendah*', but it collocated with the word '*murah*'. In her final draft, she wrote '*harga lebih murah*' as the equivalent of 'lower price'.

In relation to the structure problems in the translation process, the student translators self-corrected the structure for the purpose of the TT's social acceptability. In order to ensure that their TTs were grammatically acceptable by the TL readers, they visited various websites such as *Harian Kompas* (<http://tekno.kompas.com>), *VOA* (<http://www.voaindonesia.com>), *Kamus KBBI* (<http://www.kamuskbbi.web.id/>), *Kajian Pustaka* (<http://www.kajianpustaka.com>), *Info Komputer* (<https://www.infokomputer.com/tag/rekondisi/>), *Gema Nusantara* (www.gemanusantara.org), *Badan Pengembangan dan Pembinaan Bahasa*, the Ministry of Education and Culture (<http://badanbahasa.kemdikbud.go.id>) and *begawei.com* (<https://www.begawei.com>). The information in these websites is written in Bahasa Indonesia which can, therefore, become the reference of social acceptability of the text.

Student A self-corrected the structure of the clause '*Samsung akan kemudian menjual*' which was not structurally unacceptable in the TL by visiting *Harian Kompas* and *Info Komputer* websites. In those websites, he found two socially acceptable structures of the clause, either by moving the connector '*kemudian*' into the beginning of the clause as in '*Kemudian, Samsung akan menjual*' or by placing it after the subject as in '*Samsung kemudian akan menjual*'. In his final draft, he decided to move the position of the connector to the beginning of the clause as in '*Kemudian, Samsung akan menjual*'.

Besides, Student B also encountered the structure problem of finding the equivalence of the ST clause 'returned to the company by users'. In her first draft she wrote '*yang dikembalikan oleh pengguna ke perusahaan*' as the equivalent of the clause. Ensuring that her draft was structurally correct in reference to the TL structure, she visited the *KBBI* website in which she found that the agent object, indicated by the use of the word '*oleh*', could only be placed after a verb phrase. The verb phrase in the ST clause was 'returned to the company' equivalent with the ST clause '*yang dikembalikan ke perusahaan*'. Through the help of this online resource, she self-corrected her draft by placing the agent object '*oleh pengguna*' after the verb phrase as in '*yang dikembalikan ke perusahaan oleh pengguna*'.

In addition, Student C was also found to have self-corrected the structure of the draft of her translation. One of the problems was finding the equivalent of the ST phrase 'one-year upgrade programs' which was written

'*program satu tahun upgrade*' in her first draft. To solve such problem, she visited the *Badan Pengembangan dan Pembinaan Bahasa* website and found the article entitled '*Pedoman Umum Ejaan Bahasa Indonesia Yang Disempurnakan*' (General Guidelines of Bahasa Indonesia's Spellings). Her decision to choose this websites in self-correcting the structure of this phrase indicated her good management of online resources, i.e. she knew what kind of online resources that were helpful to solve a certain problem in translation. In that article, she found that the acceptable phrase structure of Bahasa Indonesia placed the modifier after the phrase core. As the core is '*program upgrade*', the modifier should be placed after the core as in her final draft '*program upgrade satu tahun*'.

The same online resource was also used by Student B when she self-corrected the structure of her first draft '*Angka ini lebih tinggi dibandingkan dengan yang sebelumnya diungkapkan pejabat negara*' as the equivalent of the ST clause 'The figure is higher than the 900 deaths previously cited by officials'. The structure used in her first draft was particularly influenced by the SL structure in which adverb of time could precede the verb as in the ST clause 'previously cited by officials'. However, referring to the website she visited, the TL structure only allowed an adverb of time to be placed at the beginning or at the end of a sentence. Therefore, in her final draft she moved the position of the adverb of time to the end of the clause as in '*Angka ini lebih tinggi dibandingkan dengan yang diungkapkan pejabat negara itu sebelumnya*'.

In terms of translation quality, Student C had better quality translation of text 1. As displayed in Table 5, her work in translating text 1 was scored 80 meaning that she had no problem of comprehending the content of the message in the ST; therefore, she was able to transfer the message to the TT accurately.

Table 5: The evaluative scores of the student translators' work

No.	Evaluation Criteria	Score					
		Student A		Student B		Student C	
		T1	T2	T1	T2	T1	T2
1.	Accuracy	24	21	24	27	26	24
2.	Equivalence	19	15	17	16	19	17
3.	Translation Problem Solving	15	12	12	13	15	15
4.	Grammar	10	13	11	13	12	11
5.	Textual flow	7	6	8	8	8	8
Total		75	66	72	77	80	75

In addition, almost all of the ST idioms and collocations were provided with the right equivalents in the TT. This excellent work was caused by her good ability in online resources management. For example, it was found that she was the only student translators who successfully found the collocation of the verb '*peduli*' (equivalent with 'care' in the ST). As mentioned earlier, she found preposition '*dengan*' as the right collocation for the verb

'peduli' after reading the article provided in the *Kata Baku* site. Meanwhile, Student B had better quality translation of text 2. Her work on translating text 2 was scored 77 meaning that she almost had no problem of comprehending the content of the message in the ST; therefore, despite few omissions and additions to the original information, she was able to transfer the message to the TT accurately. For example, when translating the ST sentence 'The person declined to say how big a discount the refurbished phones would be sold at, which markets the phones would be sold in or how many refurbished devices Samsung could sell', she only took the point of each of the clauses by writing '*Orang tersebut menolak memberitahu besarnya potongan harga, pasar penjualan, atau jumlah ponsel yang diperbaharui itu akan dijual*'. In this TT, she made the sentence more concise by omitting several ST words, but such omissions did not interfere with communication of the original message. Meanwhile, Student A with lower skill in online resources management was given the lowest score, particularly in translating text 2. The topic of text 2 was about technology that obviously contained some specialized vocabulary that would be hard to be translated without the help of online resources. The student translators should have good knowledge of certain websites providing information about technology development written in the target language. For example, Student A kept the ST term 'high-end' in his TT, while Student C found its equivalent after visiting such websites as Merriam-Webster, dictionary.com, TheFreeDictionary. Those websites provided the explanation of the term which became the reference for her to write the TT word '*mutakhir*' as its equivalent. The findings of this research show that online resources management is an important skill in translation process, particularly in doing self-corrections. Online resources serve as the place to which the student translators consult their translation problems. Nevertheless, some of them still have low ability in managing online resources. A good ability in online resources management is reflected through their ability to find the best website for a certain translation problem. Good ability should be understood as the ability to find the right online resources for the right translation problems because using online resources without a good management will lead to time wasting and unsolved translation problems. This is in line with [18: 162] who says that the non-selective use of the Internet results may often lead to inappropriate or even wrong translation solutions. This means that translators should not take search results found on the Internet as an absolute authority. They must be able to filter which search result best helps them in the translation process, particularly in doing self-corrections. Everybody can easily have access to online resources, but not all of them can manage them well. In addition to Kourouni's [15: 204] classification of online resources, the findings of this research classifies the online resources into eight broad categories: (i) encyclopedias, (ii) general monolingual online dictionaries, (iii) specialized monolingual online dictionaries, (iv) general bilingual online dictionaries, (v) free machine translation services, (vi) online news, (vii) specialized bilingual online dictionaries, and (viii) agency of language development and construction.

5. Conclusions, Limitations and Suggestions

5.1 Conclusions

Terminology and structure are two main problems faced by the student translators during the translation process. To solve such problems, a good management of online resources is needed; otherwise, the longer time will be spent and the problems will remain unsolved. Monolingual online dictionaries in various websites provide the opportunity to solve the problems related to terminology. In solving the structure problem, the best online

resources are the websites written in a target language, particularly the containing the information about the standard structure of the target language. The findings of this research show that the student translator with a good skill in online resources management produces a better translation quality. Therefore, these findings can become a consideration to introduce good management on online resources in translation teaching and learning process in the classroom.

5.2 Limitations

In conducting this research, the researcher also recorded several limitations. First, this research took only three student translators as the research participants, whose findings, therefore, cannot be generalized in any circumstances. Different participants, different approach, and different ST may lead to different findings of the research. Second, the use of Translog and Camtasia in collecting the data influence the participants' work atmosphere as they felt being observed; therefore, they might find it difficult to get relaxed while translating the text.

5.3 Suggestions

The lecturers should, undoubtedly, have a good knowledge on online resource management in translation process; therefore, they are able to introduce the student translators to a variety of helpful online resources in translation process. In addition, student translators should be given more exercises on translation using Translog and Camtasia before they were selected as research participants. For other researchers interested in doing research on translation process, particularly involving online resources, it is advisable to involve professional translators to find out how they managed online resources in translation process.

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