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The Impact of Computer-Assisted Translation (CAT) on Translation Quality: A Comparison with A corpus of Saudi Translators' Generated Texts

Prepared by

Nouf Abdulrahman Nami Alshaikh
M.A in Translation Studies
Hull University
Noooufa0@gmail.com
00966546932310

Abstract

Computer-Assisted Translation (CAT) has emerged as an essential component of translation practice due to the developments in technology in recent years. However, CAT tools were always compared with human translation regarding the quality of the output. This research seeks to examine the impact of CAT tools on the quality of translation output compared with human translation in terms of three important aspects: grammaticality, lexical ambiguity, and meaning soundness. The researcher used descriptive analytical approaches to analyze a corpus consisting of (15) texts to be translated from English into Arabic. The research participants consisted of (40) Saudi female translation students who study in the eighth level at the College of Languages and Translation at King Saud University in Riyadh city. For data collection, (20) students were asked to translate the texts using Wordfast software and the other (20) students were asked to translate the same texts manually. The researcher used a translation Quality Assessment Model (QAM) to evaluate the quality of the passages translated by the translators. The quality of the translation in each version was judged by indicating the number of errors in both CAT-based and manually translated texts. The results show that the students who translated manually committed fewer errors than the students who translated by CAT tools. In the two kinds of translations, the higher errors were in grammaticality, lexical ambiguity, and meaning soundness, respectively. The researcher recommended using CAT translation in association with human translation.

Keywords: *Computer-Assisted Translation (CAT), Human Translation, Machine Translation (MT), Saudi Translators, Translation Quality.*

Introduction

The utilization of Computer-Assisted Translation (CAT) tools has increased in recent years due to advances in technology and translation software. Translators and language teachers have found it difficult to disregard the use of CAT tools in translation due to their merits which mainly revolve around the speed of translation, the volume of translated materials, and the quality of translation (Lee, 2022).

With the major advancement in technologies, CAT tools have become a fundamental component of the translation profession (Sin-Wai, 2015). CAT tools are currently used by translators due to major factors which include speedy translation, high-quality translation, and enhanced productivity (House, 2017; Garcia, 2015). Due to the notion that CAT tools help facilitate and manage translation projects, CAT tools have gained extensive popularity. However, the usability of CAT tools among Arab translations is still understudied (Alotaibi, 2020).

CAT Tools have dramatically changed the way translators work and manage translation projects today (Bundgaard et al., 2016). It breaks down large multilingual documents into sections (phrases and paragraphs) that are stored in a database (Koehn, 2016). This is called translation memory which means previously translated material can be reused at any time. Nowadays, it is becoming more and more common for organizations and translators to use computer-aided translation tools to speed up their work and increase their productivity (Zhou & Ma, 2021).

The main obstacles to computer translation remain, as they always have been, linguistic rather than computational (Li & Daihong, 2022). These are problems of lexical ambiguity, grammatical complexity, vocabulary differences between languages, concise ellipses, and incorrect constructs (Lee, 2022). As a result, computer-assisted translation should expect and should continue to rely heavily on advances in linguistic research, particularly those branches that show high degrees of formalization (Garcia, 2015).

Computer-assisted translation has been always compared with human translation (House, 2017). Some researchers (e.g., Tsai, 2022; Lee, 2020) reported that while CAT tools are better in terms of speed and productivity, they are less in accuracy and equivalence selection compared with human translation. On the other hand, human translation was shown to be better in the grammatical and lexical aspects of translation and in the translation of collocations and idiomatic expressions (Sin-Wai, 2015).

In any translation, whether human or computer-based, the meaning of the text in the source (original) language must be fully transferred to its equivalent meaning in the target language translation (Tsai, 2022). While this seems obvious on the surface, it is often more complex. Translation is not just about replacing word for word. The human translator must interpret and analyze all the elements within the text and understand how each word can affect the context of the text. This requires extensive experience in grammar, syntax (sentence structures), semantics (meanings), etc., in both source and target languages, as well as expertise in the field of text (Pietrzak & Kornacki, 2020).

Whereas computer-based translation does have some challenges, if implemented correctly, its users will be able to realize the benefits of economies of scale when translating in areas that computer-based translation is suitable for (House, 2017). While computer-based translation is always placed in a challenge with human translation, this research attempts to compare the quality of translated texts by both CAT tools and human translation in order to see which kind of translation outperforms the other and what aspects of quality must be considered when selecting one kind of translation over the other.

Statement of the Problem

Translation has witnessed since its beginnings, especially in the current era, great developments affecting the way it works and conditions have changed in the world of translation, making it different from what it used to be (Pietrzak & Kornacki, 2020). Computer translation is a tool that is characterized by high efficiency and performance, speed of work, and strong memory, as well as the ability to meet the huge, massive, and accelerating demand for translating practical documents (Tsai, 2022).

Despite the usefulness of CAT tools in translation, many researchers such as House (2017), Garcia (2015), and Bundgaard (2016) reported that CAT translation has flaws in terms of accuracy and in the translation of specific linguistic notions such collocations and idioms compared with human translation. Also, CAT tools are still inefficient in translating texts from complicated languages such as the Arabic language (Mahdi et al., 2022).

In this regard, computer-assisted translation suffers from many problems, especially with regard to the Arabic language (Samman, 2022). There is no computerized Arabic dictionary that

serves the Arabic language in computer-assisted translation with other languages as well as a lack of Arabic texts translated into other languages which can be used as a linguistic repertoire that serves machine translation (Alshaikh, 2022). According to Abufardeh & Magel (2008), the translation of the Arabic language has lagged behind the advances in technology-based translations. Several studies (e.g., Alkhatnai, 2017; Fakhry Tharwa, 2019; Ababneh, 2019) reported that Arabic translators have reluctance to use CAT tools due to the complications that these tools have when training Arabic texts. The Arabic language has unique phonological, phonetic, morphological, and syntactic characteristics that make it complicated for language processing (Fatani, 2009).

In the Saudi context, varying perspectives about the effectiveness of CAT tools were revealed by different studies. For example, Mahdi et al (2022) reported that CAT tools were used by Saudi students to translate collocations and that CAT tools were effective in translating difficult collocations. But Alanazi (2019) reported that Arabic translators face difficulties in the usage of CAT tools in translating Arabic texts due to the phonetic, morphological, syntactic, and lexical differences between English and Arabic languages. Samman (2022) concluded that while Machine Translation Post-Editing (MTPE) assisted students to be away from deletion and technical errors, the volume of errors that relate to grammar, accuracy, and comprehension was higher in Arabic-translated texts.

Like other Arab translators, Saudi translators face difficulties in using CAT tools in translating, especially Arabic texts. Many researchers (e.g., Al-jars, 2017; Alotaibi, 2014; Thawabteh & Territories, 2013; Fatani, 2009) revealed that Saudi translators face the problem of finding the proper equivalents when translating from Arabic to English and vice versa and that most of the Saudi translators are not aware of the capabilities of CAT tools. On the other hand, various studies (e.g., Alkhatnai, 2017; Fakhry Tharwa, 2019; Ababneh, 2019) concluded that there is no sufficient emphasis on the translation practice, the integration of technology into translation instruction, and training the Saudi translators on CAT tools in Saudi universities that offer translation courses.

In light of the above arguments, the current research seeks to examine the effect of CAT tools on the quality of the translation of Saudi translation students in order to elicit the quality aspects of CAT tools compared with the students' human translation and to demonstrate how CAT tools can be best utilized to deliver the optimum outcomes.

Research Questions

This research seeks to answer the following questions:

1. What is the difference between computer-assisted translation and human translation in terms of the grammaticality of the translated texts?
2. What is the difference between computer-assisted translation and human translation in terms of the lexical ambiguity of the translated texts?
3. What is the difference between computer-assisted translation and human translation in terms of the meaning soundness of the translated texts?

Research Significance

The integration of technology into translation practice has become a vital prerequisite in the world of translation. This research is beneficial in delivering new insights into the capabilities of CAT tools in terms of translation quality and the degree that such tools can be dependable. On the other hand, this research provides comparable insights about CAT tools and human translation and determines the aspects in which the CAT tools outperform human translation and vice versa.

Furthermore, this research has much to do with the training of Arab translators in general and the Saudi translators. The research literature showed that there is a gap between the status quo of the translators' training and the requirements of the translation job market and the flaws in Arabic translation via CAT tools that require human intervention. So, the integration of technology into the translators' training is a promising means to close this gap, especially if this is well introduced into the curricula (Lee, 2022; Koehn, 2016). In the current job market, bilinguals who are robust in using CAT tools are preferred for jobs over graduates who lack knowledge in this area.

Lastly, the lack of Saudi studies on CAT tools' usability among Saudi translators is an extra motivator to explore such an area. The findings of this study shall give important implications for the study materials employed in translation classes and the technological skills that should be integrated and utilized in the translators' training programs.

Literature Review

The emergence of computer-assisted translation tools goes back to the global openness that allowed all countries to communicate together and the increased demand for translators and the realization of the importance of their work (House, 2017). It is also said that the idea stemmed from the Cold War between the United States of America and Russia, in order to understand the meaning of words and read them more quickly, as both countries worked on experiments for automatic translation in specialized centers for translation. Since then, Warren Weaver coined the term "Machine Translation" in his note foretelling the existence of translation software in the future (Tsai, 2022).

Indeed, it wasn't long until an American company called "Alpent" invented the first automated translation support system. In the mid and late eighties in Germany, Jochen Hummel and Iko Knyphausen released the "Trados" software. Computer-assisted translation has reached its present form (Pietrzak & Kornacki, 2020).

Translation using translation tools is a complete system that is downloaded to the computer (software) and has a database of terms and translations (loaded translation memory) that the translator himself enters at the beginning and then adds and enriches it every time he translates a new file (Sin-wai, 2015). The software then uses this automatically updated memory to filter the best translation of the text based on the memory it has (Zhou & Ma, 2021).

Computer-assisted translation tools differ from machine translation as they help the human translator do their work more quickly and manage their translation projects as compared to machine translation in which the computer does the translation job as in any well-known translation service such as Google Translator or software (Li & Daihong, 2022).

CAT tools usually contain a translation memory that stores previous sources and target translations for easy reference while working. Terminology grammar is also an integral part of translation tools, giving translators the ability to develop their bilingual skills in their subject areas (Lee, 2020).

There are many advantages of translation with the help of CAT Tools that all revolve around providing the best translation experience, a faster way to translate large and similar files, and ensuring translation quality based on certified translation memory (House, 2017). The reason for this increase, and perhaps the most important feature of computer-assisted translation software is that it maintains a comprehensive database of all foreign vocabulary and sentences and their translations previously chosen by the translator (Garcia, 2015). This data is called translation memory. This memory relies on a simple idea which is that most of what people speak is a repetition of a limited number of vocabulary and linguistic structures. If the software memorizes every sentence chosen by the translator with its foreign origin, it reduces the workload to a large extent, as well as being able to unify the vocabulary and formulas in which it is written. (Koehn, 2016),

Some of the professional CAT programs include excellent features such as assessment of translation quality and grammatical errors, instant access to glossaries and dictionaries to check the meanings of vocabulary, and access to a giant database of translation memories that have been used by hundreds or thousands of translators before, making translation faster and easier (House, 2017).

CAT tools have sparked a growing debate in the literature about their impact on foreign language learning with supporting views for CAT tools and fear of inaccurate translations (Pietrzak & Kornacki, 2020). Nonetheless, as Lee (2020) claims, technological advancements have enabled online translators to improve the output text's grammatical and lexical accuracy. Lee (2020) believes that online translators can be beneficial for language learning when instructors are aware of their limitations and learners are given adequate instruction. According to Doherty (2016), many students use online translators in their written production assignments because of the tools' accessibility, the speed with which the translations are provided, the variety of languages included, and the translations' accuracy.

Both human and computer-based translation have their share of challenges (Lee, 2020). For example, two translators will not produce identical translations of the same text in the same two languages, and it may take several rounds of revision to meet client requirements (Garcia, 2015). CAT tools have difficulties translating the contextual and cultural elements of the text, and their quality depends on the type of system and how it is trained, but they are very effective for certain types of content and use cases, which include, for example, mechanical content related to car users, repetitive text, structured language, and many more (Koehn, 2016).

Some studies, on the other hand, have advised against using these online tools, citing issues with idiomatic expressions (Luton, 2003), lexical and structural ambiguity (Somers, 2011), excessive reliance on CAT tools by lower proficiency learners (Naghdipour, 2022), and learners consulting CAT tools when teachers do not require it (Vardaro et al., 2019). The ambiguity in the linguistic output provided by CAT tools, which can impact the quality of the text, is a frequently

reported issue (Bowker, 2019). It is argued that this ambiguity is not adequately addressed by lower proficiency learners who may not recognize when a translation is incorrect (O'Brien et al., 2017).

Many previous studies have revealed valuable insights about the usability of CAT tools in translation quality and in delivering considerable translation output. Such studies were conducted in various contexts and yielded varying results based on the level of technology used and the skills associated with the use of such tools. For example, Lee (2022) discussed the quality of machine translation outputs by using Google Translate from Korean to the English language for EFL students. Also, the factors within the source text that influence the quality of machine-translation output. The corpus of the study consisted of (104) texts translated by the students and evaluated by five trained assessors. The context, grammar, mechanics, and vocabulary were the areas to be assessed by the evaluators. The findings demonstrated that the texts translated by machine translation were better than the texts translated manually by the students. However, both the areas of punctuation and the complexity of sentences were shown as the most complex areas in the source text. Moreover, no impacts were noted in the areas of grammatical accuracy, lexical accuracy, contextual understanding, and lexical diversity.

Also, Cancino & Panes (2021) investigate the influence of Google Translate on the quality of writing made by Chilean EFL secondary students. (61) students were divided into two groups: a group with access to Google Translate and a group without access to Google Translate. The quality of writing was evaluated based on accuracy, syntactic complexity, and T-unit length. The findings demonstrated that the group that has access to Google Translate was better in accuracy and syntactic complexity compared with the group with no access to Google Translate. The study stressed the need to train all the students on how to utilize Google Translate.

El-Garawany (2021) examined the effect of using the computer-assisted translation tool Wordfast Anywhere on the development of translation skills in English as a foreign language among students of the English Department. The sample of the study consisted of 48 students from the second year in the Department of English at the Faculty of Education, Sadat City University, Egypt, where they were divided into two groups: an experimental group (n = 24) and a control group (n = 24)). The researcher used the translation skills test in English as a foreign language as a pre-test. The experimental intervention took seven weeks, as the experimental group was taught using the Wordfast Anywhere computer-assisted translation tool, while the control group was taught in the usual way. The results of the study showed that the students of the experimental group showed a statistically significant progress in translation skills in English as a foreign language. The researcher concluded that the use of the computer-assisted translation tool Wordfast Anywhere has a statistically significant effect on the development of translation skills in English as a foreign language among students of the English Department.

In Saudi Arabia, some recent studies explored the use of CAT tools by Saudi translators. For example, Alshaikh (2022) examined the translation difficulties experienced by Saudi translation students in the college, especially while translating legal texts. The findings of the study showed that Saudi translation students use CAT tools, Google Translation, and machine translation while translating legal texts.

Khatim & Sir (2022) examined the usage of CAT tools by Saudi students at Majmaah university. Using the interview with (25) undergraduate students from the English language and translation department, the study investigated the merits of using CAT tools in translation and the impact of CAT tools on the quality and productivity of translation. The findings showed that the students have positive attitudes towards computer-assisted translation. Also, it is shown that the students face challenges while translating by CAT tools such as the translation of collocations, the translation of words that have cultural connotations, and the translation of lexical and syntactic ambiguities.

Mahdi et al (2022) investigated the impacts of employing mobile translation applications in order to translate collocations. Using the experimental design on 47 EFL students at the University of Bisha in Saudi Arabia. The experimental group students utilized a mobile App (Reverso) while the control group students used paper-based dictionaries only. It was shown that the translation application was better in translating fixed and medium-strength collocations compared with weak collections from Arabic to English and vice versa.

Alrajhi (2022) examined and compared the quality of Google-translated texts across four writing genres with student–translated texts by Saudi EFL college students. It was shown that the texts translated by Google Translate were better than the texts translated by the students in each of the narrative and descriptive writing. Also, it was shown that the texts translated by Google are better in style, content, and literacy, especially in persuasive, expository, and descriptive writing. On the other hand, Google Translate was favored by the students in terms of grammatical accuracy, quality in general, and lexical alternatives provision.

The above literature shows that CAT tools are evidenced for their effectiveness in translation and in the quality of translation. However, the effectiveness of CAT tools was a point of debate, especially when it relates to the aspects of accuracy, equivalence, and lexical selections. Also, the useability of CAT tools was challenged by the complicated nature of the Arabic language and the skills of the Arabic students. In Saudi Arabia, the use of CAT tools by Saudi translators is still an understudied area and it is still comparable with human translation. So, the current study aims to explore the impact of CAT tools on the quality of translation output in comparison with human translation or the students' generated translation by Saudi university translation students.

3. Methodology

3.1. Research Design

The current study uses the descriptive analytical approach. This approach is used in this research to identify the impact of CAT tools on translation output. The descriptive and analytical approach tries to describe and analyze the quality of CAT tools and human translation.

3.2. Participants & Corpus

This research comprised (40) Saudi female translation students who study in the eighth level at the College of Languages and Translation at King Saud University in Riyadh city, Saudi Arabia. These students studied CAT tools as part of their Translation & Technology course. They were

given classes on the most important CAT tools such as Trados, Wordfast, and memoQ. They studied these CAT tools for at least one semester.

In this research, (20) students were given (15) texts to translate them from English into Arabic language using Wordfast software. The other (20) students are given the same texts to translate them manually without using any CAT tools. The texts were approximately of a similar length (200 – 250 words). Also, these texts were taken from the students' materials that study come across in their translation classes. The selected texts were the texts that were not translated before by the students. All the students' first language is Arabic and their level in the English language ranges from upper intermediate to advanced. The students were given (3) days to translate the texts and to return them by e-mail.

3.3. Instrumentation

To collect data, the researchers used the Translation Quality Assessment (TQA) model. The researcher used a translation quality assessment model to evaluate the quality of the passages translated by the translators. The researcher benefited from the TQA model introduced by Garcia (2015) and House (2017). Below is the TQA model used in this study.

Table 1

Translation Quality Assessment (TQA) Model

S.	Category	Sub-category
1	Grammaticality	Subject-verb agreement
		Tense selection
		Sentence structure
		Word order
		Punctuation rules
2	Lexical Ambiguity	Word spelling
		Word choice/register
		Equivalency
3	Meaning soundness	Comprehensibility
		Appropriateness to context
		Chain of thought

The researcher evaluated the CAT-based texts and the manually translated texts as per the above TQA model. The quality of the translation in each version was judged by indicating the number of errors in each of the above sub-categories in both CAT-based texts and the manually translated texts.

The researcher submitted the TQA model and the translated passages to a group of experts to judge the validity of the research tools. More than half of the experts judged the research tools as being essential to the research goals, and then the research tools are considered valid. In order to achieve reliability in this research, the researcher provided a detailed account of the data collection process and the procedures of the study. This is to replicate the findings of the study under comparable conditions.

7.3. Data Analysis

The researcher used the CAT-translated texts in order to benchmark them with the human-translated texts. Each category and sub-category in the TQA model was assessed and the number of errors was calculated in each category for the two types of translation. The research explained each category and cited examples from the students' translations. Frequency and percentage were used as the basic statistical tools to count the Frequency and percentage of each item in the TQA model.

4. Results & Discussion

The below part shows the results of the study obtained through the TQA sheet. Table 2 shows the results of the study as below:

Table 2

The Volume of Errors in Each of CAT & Human Translation

Category	Sub-category	CAT Tools Translation		Human Translation	
		F	**%**	**F**	**%**
Grammaticality	Subject-verb agreement	39	17%	4	16%
	Tense selection	8	3.5%	6	24%
	Sentence structure	45	19.6%	3	12%
	Word order	17	7.4%	2	8%
	Punctuation rules	33	14.4%	1	4%
Lexical Ambiguity	Word spelling	42	18%	3	12%
	Word choice/register	4	1.7%	0	0%
	Equivalency	12	5.2%	2	8%
Meaning soundness	Comprehensibility	13	5.6%	3	12%
	Appropriateness to context	6	2.6%	0	0%
	Chain of thought	10	4.3%	1	4%
	Total	**229**	**100%**	**25**	**100%**

The above findings show the frequency and percentage of each item in the sheet for both the CAT translation and the human translation. The corpus of the study comprised passages translated by CAT tools (15 translations) and passages translated manually (15 translations).

The above table shows that there are differences between the CAT translation and the human translation in the categories and sub-categories of the TQA sheet used to collect data.

Generally, the results showed that the errors of the CAT translation are higher than the errors of the human translation and this indicates that the quality of human translation is highly better and comparable with the CAT translation. It is shown that (229) errors exist in the CAT translation and (25) errors in the human translation.

In terms of *grammaticality*, the results in table 2 revealed that the most common errors made by the participants who translated by CAT tools were *sentence structure* (45 errors), followed by *subject-verb agreement* (39 errors), and *punctuation errors* (33 errors), then *word order* (17 errors), and *tense selection* (8 errors).

On the other hand, the most common errors made by the participants who translated manually were *tense selection* (6 errors), *subject-verb agreement* (4 errors), *sentence structure* (3 errors), *word order* (2 errors), and *punctuation errors* (1 errors).

In terms of *lexical ambiguity*, the results in the table 2 revealed that the most common errors made by the participants who translated by CAT tools were *word spelling* (42 errors), *equivalency* (12 errors), and *word choice/register* (4 errors). On the other hand, the most common errors made by the participants who translated manually were *word spelling* (3 errors), *equivalency* (2 errors), and *word choice/register* (0 errors).

In terms of *meaning soundness*, the results in the table 2 revealed that the most common errors made by the participants who translated by CAT tools were *comprehensibility* (13 errors), *chain of thought* (10 errors), and *appropriateness to context* (6 errors). On the other hand, the most common errors made by the participants who translated manually were *comprehensibility* (3 errors), *chain of thought* (1 error), and *appropriateness to context* (0 error).

The findings of the study showed that the CAT tools are comparable with the human translation in terms of grammaticality, lexical ambiguity, and meaning soundness. Although CAT tools give a quick output, but the quality of the CAT-based output is less than the human translation output.

Apart from the efficiency of CAT tools, the most important characteristic of a CAT system is its speed. This finding corresponds with the results of Guerberof (2009) and Garcia (2007) who showed that computer-assisted translation is advantageous for the speed of translation, generating a larger volume of translated material, and saving the translator's time.

The findings of this study revealed that the use of CAT tools is in quest of reducing translation time and improvement of translation skills. This finding is supported by Ababneh (2019) and O' Brien et al (2017) who concluded that CAT tools were better associated with translation productivity.

Furthermore, it is shown that CAT is questionable due to their effect on the quality of the translated text. This finding is supported by Alanazi (2019) and Alotaibi (2020). According to House (2017), the quality of translated text is measured by the number of errors made by CAT and the degree of accuracy of the translated material.

It has been shown that CAT tools are better than purely manual translation in terms of speed and time. However, CAT tools were associated with problems such as installation problems, segmentation, and memory (Doherty, 2016). Furthermore, the price and availability were shown to be important factors discouraging the use of CAT tools (Fatani, 2009). CAT tools have become an indispensable and useful aid in the translator´s life and work. These translation systems and programs definitely save time, cost and increase the quality and efficiency of translation. It is clear that CAT tools have a great impact on contemporary translation quality. In addition to the development of computer-assisted technology, the quality of translation has been still progressing.

The above findings correspond with Lee (2022) who showed that the advantages of CAT translation are the production of translation in a limited period of time and the translation of large amounts of material. Also, Mahdi et al (2022) showed that CAT translation has some

disadvantages such as poor quality, the need for revision, and no cultural implication. Also, compared with human translation, CAT translation was better in speed and time, but it was less in quality and accuracy (Ababneh, 2019). The study recommended the use of computer-based translation in association with human translation.

5. Conclusion & Recommendations

The above findings show that the translation students who translated manually committed less errors than the students who translated by CAT tools. In the two kinds of translations, the higher errors were in grammaticality, lexical ambiguity, and meaning soundness, respectively. Although CAT tools outperformed manual translation in terms of speed and volume of translation, human translation outperformed CAT tools in some important linguistic respects.

Such findings imply that translators should benefit from both CAT tools and depend on human translation at the same time. Universities should give specialized training courses for translators on CAT tools so that the translators overcome the problems they face while translating a wide range of text types. If the translators consider buying CAT programs, they should focus on the following features: excellent terminology management, fast database searching, flexibility, robustness (not easy to crash), user-friendliness, and wide support of file formats.

The translators should have the ability to deal with computer technologies and translational tools which are likely to increase their translational productivity, speed up their translation output and help them produce a beer translation quality.

Using CAT translation in association with human translation becomes essential in certain types of translations, especially literary texts and texts that have many collocations and idioms. Human translation is indispensable for the consideration of quality and accuracy. Also, translation students should be trained to use CAT translation tools and to learn how to choose the CAT tool that fits their targets. Finally, translation students should assess the quality of translation based on many standards that include accuracy, style, clarity, and error counting.

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