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CAT Tools in Translation of Collocations: An Empirical Study of Impact on Saudi Electronic University Learners

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Abstract---This study aims to fill this gap by exploring the impact of CAT tools on translation and the complications that occur during collocation translation. The study used a collocation test of ten statements to be responded to by 95 students of Saudi Electronic University. The data was analyzed to investigate the productivity of the respondents using CAT tools for translation of the collocations in the assessment. Findings showed a positive impact of these tools on the student's performances with an average score of 71.97% in the collocation test. Results also showed that there were no significant differences between students' score in the test attributable to their level of enrolment. Finally, no statistical differences were found between students' score in selecting the correct verb collocation and selecting the appropriate rendering. The study concludes with reinforcing the importance of multiple ways of training translation students in the use of CAT Tools and recommends providing students with access to these. Furthermore, the study also recommends pertinent solutions to the problems likely to arise in the integration of CAT tools in translation studies.

Keywords---Arabic to English translation, CAT tools, languages, verb collocation.

Introduction

The phenomenon of translation plays a significant role in understanding diverse languages and perspectives of various values and ethnicities (Pintado Gutiérrez, 2021). Therefore, translation plays a sensitive role in many sectors due to the fragile nature of the language barrier. There exist many Computer Assisted Translation (CAT) tools that allow translation across several language pairs, but one cannot entirely depend on these tools as there are certain complications in collocation translation. It is difficult to translate the exact meaning of a sentence from one language to another which is why an expert's advice is required to avoid

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losing perspective in translation (Läubli et al., 2020). Moreover, with the use of CAT tools, many linguistic complication arise which lead to loss of meaning in the end product especially in conversational data. Collocation translation is a never-ending battle between matching proper nouns with proper verbs, appropriate verbs with proper nouns, and suitable adjectives with noun phrases (Garibyan, 2022). In the Saudi context, while translating between English-Arabic, the students are required to be extra cautious while engaging in collocation translation due to language features. Moreover, collocations cannot be dropped either because that would make their Arabic translation will be inferior, weaker, and less inspired than the original English if collocations are not included (Alharbi, 2017).

This study seeks solutions to this problem in order to reduce the gaps existing in the Source Language and the Target Language when translating educational expressions, as well as strategies to reduce mistranslation by students. The importance of this study lies in the fact that it deals with the various strategies used in collocation translation. As a result, it adds to the existing knowledge on collocations while also being moderately unique.

Research questions

This research aims to evaluate the ability of Saudi students to translate verb-noun collocations based on the frequency of errors they make while translating from English to Arabic to the best of the researcher's knowledge, there has been very little research in this area, so this study may replenish a void in the existing literature. Collocations have been selected as special items for examination in this study because these are reported by translation students as being particularly challenging. Hence, it was assumed that data derived from the collocation translation by students and professional translators would be ideal in several ways. This study, therefore, aims to answer the following questions:

1. What is the Saudi students' competency level in rendering verb collocations from English?
2. Are there any differences in students' scores according to their levels of enrolment?
3. Are there differences in students' performance in choosing the correct verb collocation and selecting the suitable rendering?

Literature review

A collocation is a grouping of phrases that appear together frequently in different situations. It is critical to connecting the verb with the noun during translation such that the meaning of the source text is genuinely conveyed in the target language. The primary goal of translation is to copy many sorts of materials into another language, including literary, religious, scientific, and intellectual texts, in order to make them more accessible to a wider audience and to bring the world closer together.

Translation experts in the Arab world have been ignoring this fact (Galal,1999). Scientific research have failed to yield fully automated high-quality results in translation which concludes the fact that a study of CAT tools may help gain a

rough idea of what is being presented as they are not highly reliable so far. Even though the translation industry continues to grow year after year in Saudi Arabia, yet research in the translation sector and translation performance in Saudi Arabia is limited (Alotaibi, 2014; AlOneen, 2020; Faris & Sahu, 2013).

Abu Dayyeh (2020) investigated how many practicing translators and translation trainees from two Palestinian institutions used CAT techniques in Arabic/English translation. The study looked into numerous elements of CAT tools, including the participants' sources of acquaintance with them, the extent to which they used them in the translation process, and their perceptions of their dependability. Giving credit to Bowker's (2002) statement, the emphasis has shifted from the idea that robots should be targetted to substitute human translators and is now decisively focused on how machines can **assist** human translators. This transition resulted in the development of a relatively new area known as Computer-Aided Translation (CAT), which is defined as a set of electronic tools that assist [decoders] in completing jobs and increasing productivity. Numerous researchers have emphasized the continued requirement to maintain translation prospectuses updated in order to meet the requirements of the specialized market, as well as the issue of incorporating knowledge into translator training (Alcina, 2008; Bowker, 2002; Frérot, 2019; Gogić, 2020).

The fact remains that the greater the distance between the SL and the TL, the more difficult it will be to transfer. The disparity between the two languages, as well as the cultural differences, make translation a difficult task. According to Kenny (1999), using CAT technologies in university courses could greatly expand the field of study and instruction. Numerous research articles have been published on the use of CAT technologies and their integration into translation programs' curricula.

Translation Procedure

According to Nida (1964), translation procedures can be categorized into two types: i. technical and, ii. structural procedure. The former necessitates a thorough examination of the source and target languages, as well as a thorough examination of the SL text before translation. The later necessitates a continuous re-evaluation of the translation. It also gives a comparison of the existing translation to other translators' output with the same text. The system of classification also assesses the communication efficiency of the translated text by soliciting feedback from the TL audience to assess its accuracy and effectiveness, as well as observing their responses.

A CAT tool is not just for Translation Memories and Term Banks. Committed translation word processing software, quality assurance (QA) tools, electronic dictionaries, voice recognition tools, built-in MT, software localization tools, optical-character recognition (OCR) scanning tools, and other technologies are also part of today's CAT tools (Bu, 2021; Dejica-Cartis, 2012). The larger practice in translation is to translate word to word, but this technique often gives results that are out of context specifically in the case of idioms and proverbs. Another method that is used is the literal method of translation where the construction of grammatical sentences is translated using the CAT tools. The free translation

method, on the other hand, deals with translating without any precise style or structural formation, the sentence is directly transferred into the computer-assisted translation tools (Rothwell & Svoboda, 2019).

Methods

Research design

The research uses an analytical methodology to observe the performance of 95 student in the Saudi Electronic University across all 5 branches (Riyadh, Jeddah, Dammam, Abha, Qaseem) studying in the department of English and Translation. In this program they learn how to use Translation technology, including CAT tools. The study is based on the empirical inspection of the variable differences in the results obtained for the 10 questions answered by the students during the 30-minute duration of testing to translate collocations from English to Arabic. Data were collected in the second semester of the academic year 2020.

Participants

The study sample comprised 95 Saudi students at the Saudi Electronic University enrolled at three levels, i.e., fourth, sixth and eighth. Here, the students take a course called Principles and practice of Computer Aided Translation (TRA 420) at the fourth level. This indicates that all participants were aware of CAT tools at the time the study was conducted.

Instrument

A collocation test was used to measure students' ability to understand and translate verb-collocations. The test was adapted from (Brashi, 2009), and is validated through multiple use in earlier studies. Moreover, the test reliability was checked using Cronbach's Alpha. It scored .073 which shows acceptable level of consistency.

Though Brashi (2009) is a more detailed test, this study included only 10 pairs of sentences. Students were required to select the correct verb collocation as well as the correct rendering. Moreover, the former used several alternatives for each question for students to select from, this study used only three alternatives. As soon as the test was prepared, a link to the test (Google Form created by the researcher) was sent to the translation instructors in the English language and translation department in the 5 branches. Instructors were requested via the proper channel to send the test link to the students and encourage them take the test which would require only 30 minutes (max). Earlier, the researcher contacted the instructors in person to explain the procedure of the text. It was an only a one-time test and being in the electronic format, the results were accessible to the researcher automatically.

Data analysis and results

The respondents were provided a link to a free CAT tool website at the beginning of the test. Many students used the strategy of synonymizing, the students

translated the words sharing semantic features using the synonyms closely related to the phrase. Several students utilized the generalization strategy as they were unable to figure out the precise term for the collocation, therefore, the subjects attempted for generalization of the words. It is certain that generalization indicates a lack of regard for limitations on vocabulary knowledge and use, and can thus be severely insufficient (Alarifi & Alwadain, 2020). Moreover, in the Target Language, it has a less precise meaning. Another strategy employed was paraphrasing, the use of this strategic approach is attributed to a lack of concise linguistic equality. Several statistical tests were used to process the data. Frequencies and percentages were obtained to gauge students' performance in each question of the test. One way Anova was computed to detect the differences between students' performance in the tests according to their level of enrolment. Finally, the Paired Sample Test was used to find the differences in students' performance in selecting the verb collocation and selecting the correct translation to fill each of the given sentence in the test. The following section answers each of the research questions by individually analyzing them to evaluate students' rendering of the verb collocations.

RQ1: What is the Saudi students' competency level in rendering verb collocations from English?

1. The couple ----- a pact not to talk about each other.

Table 1 below shows that 67.4% of the students selected the proper verb collection to complete the sentence, i.e., 'made a pact'. Further, that a little more than half of the students (51.6%) succeeded in selecting the proper translation of the verb collocation.

Table 1: Students' response to the first question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
Performed	19	20.0	اتخذوا عهدا	16	16.8
Gave	12	12.6	عقدوا اتفاقا	30	31.6
Made	64	67.4	تعاهدوا	49	51.6
Total	95	100.0	Total	95	100.0

2. He doesn't like to tell people what to do or ----- orders.

Table 2 indicates that the majority of the students (58.9%) selected the correct verb collocation to complete the sentence with the correct verb, i.e., 'give orders'. On the contrary, the percentage of those who rendered the collocation into Arabic correctly was lower.

Table 2: Students' response to the second question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
Give	86	90.52	يصدر أوامر	56	58.9
Make	8	8.42	يعطي أوامر	38	40.0
Tell	1	1.05	ينطق الاوامر	1	1.1
Total	95	100	Total	95	100.0

3. In other words, if a woman asks you to ----- your secrets, she may really be asking you to tell her that you have no secrets.

Table 3 summarizes that 80% of the students selected the correct verb collocation to fill in the space. However, just 56.8% of the participants rendered the verb collocation correctly into Arabic.

Table 3: Students' response to the third question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
Announce	3	3.2	كشف السر	37	38.9
Reveal	80	84.2	افشاء السر	54	56.8
Say	12	12.6	اخبار السر	4	4.2
Total	95	100.0	Total	95	100.0

4. Now, looking back on it, I don't know how we could have -----a mistake.

Table 4 indicates that 81% of the students chose the correct verb collocation, i.e., 'made a mistake'. The percentage decreased when it came to those who translated that chunk into Arabic; they amounted 56.8%.

Table 4: Students' response to the fourth question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
Presented	8	8.4	ارتكب خطأ	29	30.5
Made	81	85.3	اقترب خطأ	41	43.2
Performed	6	6.3	اخطانا	25	26.3
Total	95	100.0	Total	95	100.0

5. -----an effort to keep in touch with your friends, even if it's just a quick phone call.

Table 5 shows that more than three quarters of the students (75.8%) completed the statement with the correct verb collocation, i.e., 'make an effort'. Fantastically, the percentage of those who translated the collocation into Arabic as, 'ابذل مجهود' was even greater (90.5%) than those who selected the appropriate verb.

Table 5: Students' response to the fifth question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
Make	72	75.8	ابذل مجهود	86	90.5
Use	11	11.6	قم بمجهود	6	6.3
Exercise	12	12.6	تمرن	3	3.2
Total	95	100.0	Total	95	100.0

6. New Zealand's central bank looks well on track to -----its goal of reducing inflation to by the end of 1993.

Table 6 shows that the chunk, 'to achieve its goal', was chosen by majority of the students (86.3%) correctly to fill in the space. The same number of participants selected the correct rendering of it in Arabic as 'الأهداف تحقيق'.

Table 6: Students' response to the sixth question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
<u>Achieve</u>	82	86.3	<u>تحقيق الأهداف</u>	82	86.3
Obtain	11	11.6	إنجاز الأهداف	11	11.6
Acquire	2	2.1	الحصول على الأهداف	2	2.1
Total	95	100.0	Total	95	100.0

7. She said she thought she was ----- a favor.

Table 7 displays that 74.7 % of the students correctly selected the verb to complete the collocation to 'doing a favor'. The same percentage of them selected the correct translation for the missing collocation as 'تسدي معروف'.

Table 7: Students' response to the seventh question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
<u>Awarding</u>	14	14.7	<u>تسدي معروف</u>	71	74.7
<u>Doing</u>	71	74.7	تصنع معروف	23	24.2
Giving	10	10.5	تقوم بتفضيل	1	1.1
Total	95	100.0	Total	95	100.0

8. He wanted to think it out himself, and he didn't want to talk about it until he --
----- his decision.

Table 8 shows that 80% of the students correctly built the collocation as 'made his decision'. Likewise, 91% of them selected the correct Arabic collocation to suitably fit in the space as 'اتخذ قراره'.

Table 8: Students' response to the eighth question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
<u>Made</u>	76	80.0	<u>اتخذ قراره</u>	87	91.6
Provided	4	4.2	قدم قراره	1	1.1
Gave	15	15.8	اعطى قراره	7	7.4
Total	95	100.0	Total	95	100.0

9. The Supreme Court ----- a law on May 20th.

Table 9 indicates the just 30.5% of the students knew the collocation of 'passed a law', whereas the majority of them did not. They selected the verb 'form' to collocate with a law; while another 30.5 of them selected 'launched a law*'. On the contrary, more than half of them (57.9%) selected the right Arabic equivalent to collocate with as 'سن قانونا'.

Table 9: Students' response to the ninth question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
<u>Passed</u>	29	30.5	مرر قانونا	6	6.3
Launched	29	30.5	قر قانونا	34	35.8
Formed	37	38.9	سن قانونا	55	57.9
Total	95	100.0	Total	95	100.0

10. Knowing Nader's capabilities, it would be very hard for him to -----*the company*.

Table 10 indicates that 66.3% of the participants successfully selected the correct verb collocation as, 'to run the company'. On the other hand, the percentage of those students who succeeded to select the correct Arabic equivalent as, 'يدير الشركة' was greater as it amounted (88.4%).

Table 10: Students' response to the tenth question

Verb choice			Arabic translation		
Alternatives	Frequency	Percent	Alternatives	Frequency	Percent
Govern	18	18.9	يدير الشركة	84	88.4
Rule	14	14.7	يحكم الشركة	3	3.2
<u>Run</u>	63	66.3	يقود الشركة	8	8.4
Total	95	100.0	Total	95	100.0

RQ2: Are there any differences in students' scores according to their levels of enrolment?

Table 11 displays the descriptive and one way ANOVA results. Data shows the performance of the students registered in the three levels, i.e., four, six and eight. Results show that fourth level students scored ($M=13.90$, $Std=2.72$), the sixth level scored ($M=14.44$, $Std=2.21$), whereas the eighth level scored ($M=13.83$, $Std=2.33$). It seems that the students at the three levels scored approximately the same; however, students at the sixth level seemed to score higher by a very small margin as compared to the fourth and the eighth level students. Table 11 also shows the inferential analysis; one way Anova was obtained to measure the differences amongst students' scores according to the three levels. Results of Anova show that the F value amounted .576. Likewise, the probability degree of significance was ($Sig.= .564$) indicating that there is no significant differences between Saudi students in the translation test according to their enrolment level.

Table 11: Students' scores in the test according to level

Level	N	Mean	Std. Deviation	ANOVA	Sum of Squares	df	F	Sig.
Four	34	13.90	2.72	Between Groups	6.87	2	.576	.564
Six	32	14.44	2.21	Within Groups	548.74	92		
Eight	29	13.83	2.33	Total	555.62	94		
Total	95	14.06	2.43					

RQ3: Are there differences in students' performance in choosing the correct verb collocation and selecting the suitable rendering?

Table 12 indicates that students' score in choosing the suitable verb collocation amounted (M=73.95, Std=17.71) while they scored a little bit lower in choosing the suitable translation to fill in the sentence, (M=69.99, Std=18.29). A paired sample test was used to check if the differences between students' score in the two tests were significant. Results indicated that there was no significant difference as the Sig value indicated .629.

Table 12: *Students' scores in choosing the correct verbs and rendering into Arabic*

Test	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Choosing the correct verb	95	73.95	17.71	.517	9	.629
Choosing the correct translation	95	69.99	18.29			
Means		71.97				

Discussion

The study explored the Saudi translation studies students' ability in translation of the verb-noun collocations in the English-Arabic language pair. They study set out to answer three questions. Regarding the students' ability to render verb collocations, the study found that students scored 71.97% which is considered good level of ability in translating from English to Arabic. The results showed a positive impact of the translation tools on the students. The outcome reveals a significant relationship between students' flawed responses and strategies employed in the process of translation. This finding is in line with Brashi (2009) who found that nearly about 79% of the Saudi students identified the verb-noun collocations correctly. However, Bashi's (2009) results reported higher competency level of students than the findings of this study which may indicate the inefficiency of CAT tools in the specific environment under study here. Another interpretation may be that this may be attributed to the need for more training for students to use the CAT tools effectively which may ensure reaching correct rendering. Rothwell and Svoboda (2019) found in their comparison of surveys that a global tendency has arisen toward emphasizing professionalism in transition technology in the European countries.

The study inquired whether the course enrolment level impacted students' translation abilities. The study did not find any change according to the level. As enumerated earlier, the test takers in this study belonged to three levels, i.e., fourth, sixth and eighth and had prior knowledge of CAT tool application in translation. The participants scored approximately the same except students of the sixth level who scored marginally higher. The study used one way ANOVA to see if there is any statistically significant difference. However it is clear that due to the slight difference in the mean scores, the probability test scored higher than the significant level, (Sig=.564). This finding shows that enrolment levels do not have significant impact on students' ability in translating collocation. This finding

can be interpreted to mean that the students' dependency on CAT tools while doing the test is high and that the CAT tools did the answering for the students. Overall, no significant difference was found. This finding falls in line with Doherty (2016) that translation will lose its creativity and meaning once it is combined with Computer-Assisted Translation tools. Studies reported that using CAT tools in translation are challenging (Id-Youss et al., 2017; Kapitonova & Letichevsky, 2007; Lai & Wan, 2021; Obeidat & Mahadi, 2020). Therefore, to help upcoming translators efficiently master modern translation tools, the content of their training should include not only an understanding of these tools' development directions and the requirement for their implementation to raise translation efficacy but also, a shift in the customer-translation service provider relationship (Dweik & Shakra, 2010; Ibrahim, 2019; Ivleva et al., 2020). Lack of this understanding in this study, caused the students to encounter obstacles in contemplating the projected significance or in finding an Arabic correspondent.

Conclusion

The expansion of technology has given birth to modern ways of translation and interpretation using Computer-Assisted Translation (CAT) tools. Language being a multidimensional entity, however, it is difficult to transfer the exact meaning of a sentence from one language to another which is why an expert's advice is required to avoid losing perspective in the process. Many researchers investigated the problems encountered while using the CAT tools and translating strategies, yet, there exists a research gap in this particular area as far as collocation is concerned in the English-Arabic language pair. CAT tools, whether as part of the formal training in translation or otherwise, have inadvertently found their way into translation practices and with the expanding role of AI and tools developed from it, the role of the translator in the coming times is likely to take on a new dimension. The reason for this is that machine translations are not yet perfect and still need human intelligence to achieve the goal of accurate, meaningful, and coherent rendering in the target language. In this background, this study aimed to explore the impact of CAT tools on translation and the complications that occurred during collocation translation. The study used a collocation test of ten statements to be responded to by 95 students of Saudi Electronic University. The data was analyzed to investigate the productivity of the respondents using CAT tools for translation of the collocations in the assessment. Findings showed a positive impact of these tools on the student's performances with an average score of 71.97% in the collocation test. Results also showed that there were no significant differences between students' score in the test attributable to their level of enrolment. Moreover, no statistical differences were found between students' score in selecting the correct verb collocation and selecting the appropriate rendering.

This study and its findings hold much relevance for the tech empowered educational paradigm of Saudi Arabia as it establishes the greater responsibility that lies with the human translators in ensuring quality and accuracy of translation even when CAT tools are used as assistive measures. Translation trainers, teachers, learners, and curriculum developers can gain new insights with the results indicated here.

Recommendations

According to the study findings, students should be taught both the promise and restrictions of technology in order to have realistic expectations of CAT tools. Students should view pre-and post-editing as a vital phase in the translation procedure, rather than hoping for entirely computerized and high-excellence productivity via the machine.

Academic institutions in Saudi Arabia should consider translation technology as a creation that needs to be produced and improved regularly while keeping up with the latest advancements in the field. This perspective will permit them to train a highly-skilled generation of translators who will be armed with the most up-to-date technology innovations in order to fulfill the ever-changing needs of the translation business. Importantly, attempting to integrate it into translation teaching and learning, i.e., introducing it as an embedded aspect of translation pedagogics, establishes a link between academic institutions and the local and international translation markets.

As the data above shows, there is a pressing demand in translation courses for the usage and implementation of translation technology in general, and CAT tools in particular. On the one hand, this serves to enhance learners' abilities and increase their efficiency. Instead of focusing on purely academic aspects of translation, translation educators are advised to give and integrate additional technical tools and useful assignments based on them through their lectures. In this context, it is also advised that Saudi universities supply the necessary tools to ensure that technology is used in translation courses. Addressing instructors' attitudes toward CAT tools and translation software integration in teaching and learning activities is also critical for strong and efficient technology integration in translation courses.

Limitations

The study lacked a large corpus of data on student output in translation of collocation and its Arabic rendering, which is seen as a limitation. It is hoped that future studies will help arrive at more general results by including a bigger dataset.

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