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Inquiry into students' familiarity with computer-assisted translation tools

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Abstract

Acquiring knowledge of computer-assisted translation (CAT) technology is the basic requirement not only for translation students but also for professional translators to have good use of CAT tools. This study aimed to investigate the degree of M.A. translation students' familiarity with CAT tools used to support CAT-related activities included in the translator's workstation. To do so, a questionnaire consisting of 16 questions was prepared for data collection based on translation activities proposed by Fulford and Granell-Zafar. This includes document production activities, business management activities and translation creation activities. As the results indicated, the M.A. translation students were mainly familiar with general-purpose applications, such as word processing software and machine translations, and rarely with specific-purpose software, namely web publishing software and accounting packages. They also were in full agreement with the effectiveness of CAT tools in their productivity and efficiency.

Keywords: Computer-assisted translation (CAT) tools, machine-aided translation, technology;

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1. Introduction

The invention of the computer has had a major impact on the development of technology in all sciences and disciplines (Akcil et al., 2021; Kondrateva et al., 2018). A wide range of tools was designed to be used via the computer alongside different types of devices that were invented based on computer science. The computer, as a user interface, plays a significant role between the human translator and computer-based tools, such as computer-assisted translation (CAT) tools and machine translations (MTs), in such a way that these tools will be useless in the absence of the computer. Thus, having a general knowledge of the computer is a need for the translator to use CAT tools.

Granell (2015) implies that CAT tools are arguably the best presentative of translator-specific computer tools designed to enhance their richness and fecundity. In this context, Newton (1992) states that CAT tools provide considerable advantages in all but every area of written translation. Here, the point is that familiarity with CAT tools is of the utmost importance to the translator because it allows the translator to have appropriate use of such tools.

Despite the presence of CAT technology in the translation industry, which has brought about huge changes in the field, it is an unknown newcomer to the field of translation in Iran the extent to which there is a vacancy for such technology in the curriculum is strongly felt. There is also a need for the presence of experts to teach CAT tools to make translation students familiar with these tools that have not been fulfilled to this date. Besides, a few seminars and workshops held by experts are not enough to cover a huge number of translation students. This prevents translators from achieving a reasonable level of CAT technology and leads them to frequent use of 'traditional methods, such as paper dictionaries and typewriters as well as the old versions of personal computers' (Abdi, 2020, p. 811; Nazim & Alzubi, 2022).

CAT tools are designed to cover a set of translation activities in the translator's workstation. Many classifications of translation activities have been proposed that the translator needs to undertake (Kovacs, 2020; Locke, 2005). The shortage of these classifications was that they just covered CAT-related activities. Fulford and Granell-Zafra (2005) presented a complete classification encompassing six translation activities three of which are supported by ICT tools. This includes information search and retrieval, communications, marketing and work procurement. The other three activities require CAT tools to be supported, namely document production, business management and translation creation. They explain that document production activities are used to produce and format texts. To support such activities, a range of CAT tools can be employed, such as word processing software and presentation programs. According to them, business management activities are effective to manage client and contact data. Spreadsheet software and management packages are examples of CAT tools employed to support business management activities. Translation creation activities help the translator to formulate his/her translation. MTs alongside translation memories (TMs) are the best to achieve this.

1.1. Review of literature

1.1.1. CAT tools

CAT technology is defined as any type of computer-based tools, such as word processors, e-mail and the World Wide Web (WWW), employed to help translators do their job (Bartek & Nocar, 2018; Bowker, 2002). CAT tools are made to support translators to work more effectively. It is rather said, CAT tools are designed to be used by human translators, who play the main role in the translation process, as an aid to become more effective and sufficient.

Bowker (2002) believes that the use of CAT tools reaches beyond the translation profession. According to Bowker (2002, p. 6), CAT tools 'are rapidly becoming part of our general knowledge', because they are used not only by translators in the profession but also by people in different professions. Translation students will become familiar with the features of these tools when encountering them in some capacity. A rich literature on CAT tools is available for example on the Internet and in course books, to those who are not familiar with these tools which can help them to have an understanding of such effective tools.

CAT tools refer to computer software applications employed to accomplish part of the translation process (Quah, 2006). Quah (2006, p. 6) implies that such applications are often called in Translation Studies and the localisation industry as CAT and in 'the software community which develops this type of tool' as *machine-aided translation*. The combination of CAT tools, as Quah (2006) states, is known as *workbenches* or *workstations* because they include a set of tools. Quah (2006) argues that the main advantage of CAT tools is that they are 'language-independent', enabling translators to make use of them without considering the languages they work with. The effectiveness of these tools, as she mentions, would be based on the translator's needs. The example Quah (2006, p. 119) gives is that the translator may use a TM for localisation when it is only a small part of his/her work. The other factor that affects the choice of tool type is *cost*. That is to say, 'the higher the number of features a version has, the higher the cost'.

In the same context, Ivanova (2016) implies that CAT tools are considered the paramount technology in the translation industry that encompass a wide range of tools, such as TMs, localisation tools, etc. CAT tools, as she mentions, are not typically employed to translate the text, but to help the translator in various tasks, for example, terminology management, document production, etc. Along with an increase in the number of CAT tools, there, as Ivanova (2016) discusses, is an increased range of functions offered by these tools, for instance, the function of word count is to count the words in the source text. Ivanova (2016) believes that the most important issue relating to CAT tools is the effective employment of such tools to provide a meaningful learning environment alongside high-quality training for students that lead them to produce qualitative translations.

1.1.2. Recent studies in the field

In Iran, empirical studies in the field are few. It implies that Iranian researchers have had an interest in other areas of translation, such as translation quality assessment and text analysis and translation. It provides the researcher with the opportunity to deal with translation and technology, the aspect of translation that has rarely been focused on to this date. From rare studies undertaken to cover CAT tools, the employment of such tools by translation students or freelance translators has been studied. Thus, no study was found to address the existing gap in the research. That is to say, CAT

tools and their familiarity with M.A. translation students have not been investigated, except for part of the study conducted by Abdi (2019) as a research project.

For example, in his study, Abdi (2020) probed the CAT tools employment by Iranian freelance translators and their viewpoint on the effectiveness of CAT tools in their efficiency. The results illustrated the most employment of general-purpose software applications, such as word processing programs and presentation software, and infrequently, employment of special-purpose software, such as accounting packages and database software. In addition, most participants agreed with the effectiveness of CAT tools in their work.

Taghizadeh and Azizi (2017) made a comparison between B.A. and M.A. translation students to investigate their abilities in IT skills, their learning of IT competencies included in the translator training courses and their opinions on the importance of IT skills in their professional activities. As the results indicated, the B.A. students were more competent at using the Internet, word processing and computer maintenance, whereas, the M.A. students showed great skill in the Internet, formatting and publishing, word processing, presentation software and computer maintenance. Both B.A. and M.A. students did not know using IT tools, such as TMs and MTs. For the B.A. students, word processing, TMs, MTs, computer maintenance and markup languages were the most important skills. By contrast, word processing, computer maintenance, the Internet, TMs and MTs were of great importance to the M.A. students.

1.2. Purpose of study

Under this classification, this study aimed to investigate the level of the M.A. translation students' familiarity with CAT tools. In a wider sense, it put a lot of effort to highlight the importance of familiarity with CAT technology for translation students and contribute to the widespread use of technology in the curriculum of translation universities through this investigation. The results of the study should be helpful to those responsible for developing the translation universities' curriculum in Iran, those responsible for training translators and both translation students and trainee translators.

To achieve this, this study answered the following question:

1. What is the level of familiarity of M.A. translation students with CAT tools?

2. Materials and methods

2.1. Data collection instrument

For this study, a questionnaire was deemed to be the best and most appropriate method from other types of surveys, including interviews, observation studies and content analyses, proposed by Bryman and Bell (2011). The main advantage of a questionnaire is that it is cheaper and quicker than other types of survey 'if the sample is large and widely dispersed' (Mathers et al., 2009, p. 9). Thus, the researcher is provided with the opportunity to collect data from a huge number of Iranian M.A. translation students via this survey type.

A questionnaire encompassing 16 questions was prepared in English for data collection. The questionnaire was divided into two parts: the first part included questions about the participants' background information and the second part consisted of questions relating to the participant's familiarity with CAT tools used to support the translation activities proposed by Fulford and Granell-

Zafra (2005), including document production, business management and translation creation, as well as the participants' opinions about CAT tools.

The questionnaire was validated by three experts in the field who had teaching experience in CAT tools. They were asked to make their comments on the structure and content of the questions as well as the appropriateness of the questionnaire for measuring the level of familiarity of M.A. students with CAT tools. The questionnaire was considered highly appropriate for the study because of a high level of agreement among the three experts indicating high face validity of the questionnaire. The valuable comments provided by the three experts led to some corrections in the structure of the questionnaire as a whole.

2.2. Participants

When the questionnaire was prepared, convenience sampling was applied to select participants. Thus, the questionnaire was conveniently administrated to the M.A. translation students, from both Azad and public universities, wherever they were easy to reach, such as classrooms and university campuses. They were informed of the objective and importance of this study to obtain desired results before filling in the questionnaire. The number of respondents was 126 of whom females (N = 94) outnumbered males (N = 32). It should be noted that all data were gathered before the COVID-19 pandemic.

2.3. Analysis

Inter-rater reliability was applied to test the reliability of the questionnaire. Hence, the questionnaire was tested by 20 M.A. translation students, whose characteristics were similar to the participants of this study. After 2 weeks, the questionnaire was retested by the same students. The scores obtained from tests 1 and 2 were correlated to see whether there were similarities between them. The coefficient of correlation showed the reliability of the test (r = 0.796).

3. Results

In this section, the results obtained from the first and second parts of the questionnaire were reported. To do so, a description of the personal information of the participants was provided, followed by a careful analysis of each question relating to the familiarity of M.A. translation students with CAT tools used to cover the related translation activities, such as document production, business management and translation creation, as well as their opinions about CAT tools. Furthermore, tables were used to show the calculated frequencies and percentages of the student's answers to each question. The inferential statistic, the chi-square (χ^2) test, was also run to justify the hypothesis.

3.1. Personal details

In terms of age distribution, 67% of the M.A. translation students belonged to 20–29 age group, 21% to 30–39 age group, 11% to 40–49 age group and 1% to 50–59 age group (Table 1). A great majority of the participants (82%), as Table 1 indicates, held a bachelor's degree related to translation; whereas a minority of them had B.A. unrelated to translation. Table 1 also shows that 79% of the M.A. translation students (N = 99) had experience working as translators of whom 62% (n = 61) had between 1 and 4 years, 35% (n = 35) between 5 and 9 years and 3% (n = 3) between 10 and 14 years

translation experience. The rest of the students (21%, *N* = 27) did not have any experience in translation. The average they spent on translation-related tasks was 71 hours each week.

Table 1

Frequencies and Percentages of Age Distribution, Bachelor's Degree and Translation Experience of the Participants

Age range	*f*	%	Bachelor's degree	*f*	%	Translation experience			*f*	%
20–29	84	67.0	Related	103	82.0		No		27	21.0
30–39	27	21.0	Unrelated	23	28.0		Yes		99	79.0
40–49	14	11.0				Years of experience	*f*	%		
50–59	1	1.0				1–4 years	61	62.0		
						5–9 years	35	35.0		
						10–14	3	3.0		
Total	126	100.0		126	100.0		99	100.0	126	100.0

According to Figure 1, most of the participants (87%) had no formal computer qualification and acquired their skills. Only 13% of the participants held formal qualifications in computers.

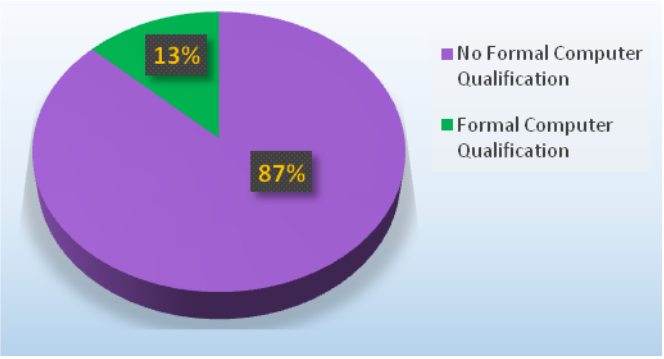

Figure 1

Percentages of the Participants' Computer Qualifications

3.2. Familiarity with CAT tools

3.2.1. Document production activities

As Table 2 indicates, from document production activities, the most familiar programs to the participants were word processing (98%) and presentation software (74%). Microsoft (MS) Word and MS PowerPoint were the most popular programs of each type respectively (85% of the participants were familiar with MS Word and 60% with MS PowerPoint). Only a small number of the participants expressed their familiarity with web publishing software and desktop publishing applications (37% were familiar with web publishing and 33% with desktop publishing programs). Among web publishing software, WordPress and desktop publishing applications, Adobe InDesign was the most familiar tool to the participants.

Table 2
Document Production Activities

Types		*f*	%	Total
Word processing software		123	98.0	126
	MS Word	104	85.0	123
	MS Notepad	13	11.0	123
	Google Docs	6	5.0	123
Presentation software		93	74.0	126
	MS PowerPoint	56	60.0	93
	Canva	19	20.0	93
	Prezi	11	12.0	93
	Keynote	7	8.0	93
Web publishing software		47	37.0	126
	WordPress	21	45.0	47
	Adobe Dreamweaver	11	23.0	47
	Wix	11	23.0	47
	Weebly	4	9.0	47
Desktop publishing software		41	33.0	126
	Adobe InDesign	19	46.0	41
	QuarkXpress	11	27.0	41
	Lucidpress	8	18.0	41
	Other	3	7.0	41
Total activity familiarity		304	60.0	504

3.2.2. Business management activities

According to Table 3, more than half of the M.A. translation students (54%) stated their familiarity with spreadsheet software used to support business management activities, of which MS Excel (71%) and Office 365 (2%) were the most/least familiar tools to the students respectively. Database software alongside accounting packages was mostly unfamiliar to the translation students (31% were familiar with database software and 26% with accounting applications).

Table 3
Business Management Activities

Types		*f*	%	Total
Spreadsheet software		68	54.0	126
	MS Excel	48	71.0	68
	Lotus 1-2-3	9	13.0	68
	Google Sheets	9	13.0	68
	Office 365	2	3.0	68

Database software		39	31.0	126
	MS Access	23	59.0	39
	Microsoft SQL Server	11	28.0	39
	Knack	5	13.0	39
Accounting packages		33	26.0	126
	Sage	14	42.0	33
	FreshBooks	11	33.0	33
	QuickBooks	5	15.0	33
	Other	3	9.0	33
Total activity familiarity		140	37.0	378

3.2.3. Translation creation activities

Table 4 shows the familiarity of a huge number of respondents (98%) with MTs used to support translation creation activities. From available MTs, Google Translate (98%), as a killer app, was the most familiar online MT to the respondents. TMs were familiar to 59% of the respondents, among which Trados (43%) and SmartCat (36%) were the most familiar TMs respectively.

Table 4

Translation Creation Activities

Types		*f*	%	Total
MTs		124	98.0	126
	Google Translate	122	98.0	124
	Babylon	2	2.0	124
TMs		74	59.0	126
	Trados	32	43.0	74
	SmartCat	27	36.0	74
	Fluency Now	15	20.0	74
Total activity familiarity		198	79.0	252

3.3. M.A. translation students' perceptions of CAT tools

In the last question, the M.A. translation students were asked to give their opinions about the important role CAT familiarity plays in the appropriate use of CAT tools. According to the results, a great majority of the students (91%) were in full agreement about the fact that acquaintance with CAT tools was of great importance to them to make good use of CAT tools to support translation activities, namely document production activities, business management activities and translation creation activities. By contrast, a few numbers of students (9%) disagreed with this fact and believed that there is no need for in-depth knowledge of CAT tools before using them. Furthermore, most M.A. translation students (86%) agreed that CAT tools employment helps them to be more productive and efficient. They also expressed their agreement with the effectiveness of hiring expert teachers in the

field and holding seminars and workshops by expert teachers in increasing their knowledge of CAT tools.

3.4. Chi-square (χ^2) test

The chi-square test (χ^2), as a non-parametric test, is run to find out 'whether the observed frequencies show a true difference from the frequencies expected if all categories were equal' (Lodico et al., 2006, p. 257). According to Peter (1997, p. 68), the χ^2 is a technique used to see that 'the associations being found are not merely due to chance'. Thus, the researcher applied the χ^2 to justify the hypothesis and find out the independency of two categorical variables in the population. In other words, the relationship between each type of CAT tool and the answers given by the participants as the null hypothesis for a chi-square independence test is determined. As Table 5 illustrates, the *p*-value of three out of nine types of CAT tools was lower than 0.05 ($p < 0.05$). Hence, the null hypothesis was rejected for presentation software, desktop publishing software and accounting packages, and the relationship between these tools and the participants was significant. Hence, they are not independent. By contrast, the *p*-value of the best types of CAT tools was higher than 0.05 ($p > 0.05$). Thus, the null hypothesis was retained for these CAT tools. This denotes that there was not a significant relationship between the participants and word processing software, web publishing software, spreadsheet software, database software, MTs and TMs, which points to their independence.

Table 5

Summary of the χ^2 for Each Tool and the M.A. Translation Students' Answers

Types of CAT tools	χ^2	*p*
Word processing software	1.128	0.288
Presentation software	9.030	0.002
Web publishing software	0.004	0.949
Desktop publishing software	8.861	0.002
Spreadsheet software	0.372	0.541
Database software	1.190	0.275
Accounting packages	9.030	0.002
MTs	1.626	0.202
TMs	0.05	0.823

4. Discussion

According to the results, general-software applications were the most familiar tools to the M.A. translation students; whereas specific-purpose software was rarely familiar to the translation students. The participants were mainly familiar with those tools employed to support translation creation activities, such as MTs and MTs. These tools are types of general-purpose applications that can produce a great impact on the quality and speed of the translation. For example, the main advantage of MT is that it helps the translator to translate large amounts of text in a very short time (Alotaibi, 2020; Wu et al., 2012).

As the results indicate, the M.A. translation students had a higher-than-average familiarity with word processing and presentation software applications applied to cover document production

activities. By contrast, the respondents had a lower-than-average familiarity with web publishing and desktop publishing software due to such applications used to support specific-purpose activities. Web publishing tools provide students with great benefits, namely creating electronic versions of materials or desktop publishing software enables students to create various forms of online content. They also help the translator to manage visual content, such as page layout and design, to be ready for publication. Thus, such applications need to be taken into careful attention not only by translation students but also by expert translators if they want to increase their productivity and reduce translation costs (Bianco et al., 2021; Markoska, 2021).

Unfortunately, the M.A. translation students had a lower-than-average familiarity with almost all CAT-related tools, for instance, database software and accounting packages, used to cover business management activities. Of all applications, MS Excel was the only familiar application to the students. Database software is designed to allow the user to create, manage and store database files, and retrieve the data whenever needed. Along with benefits provided by database software, accounting packages make the students able to organise their financial records. Hence, these applications can be helpful to students because they give the students an advantage to become competitive in today's market (Chilke & Khinchi, 2022).

Satisfactory results obtained from the study were that the M.A. translation students took a very deep view of the importance of CAT familiarity in the use of CAT tools. In their judgment, familiarity with CAT technology enables them to have the appropriate use of CAT tools to support a wide range of activities included in the translator's workstation that helps them to produce high-quality translations in a short time. This view of the translation students indicates a radical change in their approach toward the use of modern translation tools instead of traditional ones (Hasanov & Akbulaev, 2020; Videla & Martinez Diaz, 2019). In a sense, the more familiar you are with CAT technology, the better you will use CAT tools.

The results of the study had some similarities to the results obtained from the studies conducted by Abdi (2019) and Granell (2015) in that the Iranian freelance translators and UK freelancers had higher-than-average familiarity with general-purpose applications and lower-than-average familiarity with specific-purpose software. Furthermore, the participants of both studies expressed positive opinions about CAT tools and the considerable effect CAT tools produce on their productivity.

5. Conclusion

The effectiveness of CAT technology on the quality of the translation and the dramatic impact it produces on each part of the translation process and also on the competitiveness of the translator has come to the attention of many researchers. The basic requirement for achieving this is to enhance the familiarity of the translation students with such effective technology. Thus, this study aimed to investigate the level of familiarity of M.A. translation students with CAT tools to acknowledge this importance to the students if they want to have the effective use of such tools. According to the results, the M.A. translation students were mainly familiar with general-purpose software. This was in sharp contrast to the students' familiarity with specific-software applications which were rarely familiar to the translation students. This may be due to a lack of awareness among students about the enormous benefits derived from such tools and about the reasons for employing them, such as time-

saving, translation quality improvement and real-time collaboration with translation teams. The student's awareness of these benefits should be gained through CAT-related courses and be raised by experts in the field. In conclusion, the profound knowledge of M.A. students about CAT technology ensures their success and competitiveness in translation and today's market to a great degree.

The followings are the recommendations offered by the findings of this study that should be helpful to translation students and trainee translators, and to those responsible for increasing the knowledge of CAT through translation programs.

The recommendation for translation students and trainee translators is that they pay more attention to specific-purpose applications because such applications are more effective in their success and competitiveness. Thus, they are kindly advised to broaden their knowledge of specific-purpose applications used to support specific-purpose-related activities through self-taught methods and attending seminars and workshops held by experts in the field.

It is recommended that those responsible for broadening the knowledge of students via translation programs keep their knowledge up-to-date and make a rapid movement towards technological development. In a wider sense, if the success and future career of the students is of great importance to the administrators of universities and translator-training institutions, they should make main revisions to the curriculum by including CAT technology in educational programs. Hiring expert teachers in the field is the next step that they need to take.

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