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Exploring Computer-Aided Translation Competences of Some Iranian Translators

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ABSTRACT

The purposes of this study were (a) to compare BA and MA students of Translation in terms of their abilities in IT skills, (b) to compare them in terms of their learning of IT related competences in the translator training programs, and (c) to compare their viewpoints about the importance of IT skills in their professional activities. The participants of this research were Iranian male and female students of Translation Studies at the BA and MA levels (BA=110, MA=100) at the Alborz University and the Islamic Azad University, North Tehran Branch. The instrument of this research was a questionnaire on IT skills developed by Mikhailov (2015). The results revealed that BA students reported to be more competent at using Internet, Word processing and Computer maintenance, while MA students were found to be more familiar with the Internet, Formatting and publishing, Word processing, Presentation software, and Computer maintenance, respectively. Both BA and MA translators reported that they were not taught to work with IT tools such as Markup languages, Translation memory, Machine translation, Image processing, Spreadsheets, Internet, and Presentation software during their university studies. Regarding the importance of IT skills, the most important skills for the BA translators were Word processing, Translation memory, Machine translation, Computer maintenance, and Markup languages, respectively; whereas, the most important skills for the MA translators were Word processing, Computer maintenance, Internet, Translation memory, and Machine translation, respectively. The findings of this study recommended that translator training programs offer more courses in computer technologies to Iranian translators.

Keywords: *Computer-Aided Translation, Machine Translation, Translation Memory, Technological Competence, Computer-Assisted Translation Teaching*

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1. Introduction

According to Bowker (2002), the notion that machine is replaced by human has been changed, and now it has been accepted that machine can support translators, and this shift led to a relatively new field which is called Computer Aided Translation (CAT). Bowker (2002) defines this as tools which assist translators to accomplish their work and increase their product. Cem Odacıoğlu and Korkut (2015) assert that the entrance of CAT tools such as Translation Memory (TM), electronic dictionaries, corpora and terminology management to the world of translation can help translators benefit from using them in the process of translation. Pym (2013) and Chunzhi (2014) note that these new ways of translation tools facilitate the translators' tasks, accelerate the translation process, and increase the productivity of them.

According to Jiménez-Crespo (2014), "professional translation cannot be independent of the technological tools that support it. Alcina (2003) argues that new technologies should be taught to students, and instructors should help them use these beneficial computer-based tools and resources in their translation. Nowadays there is a broad perception among both translation students and translator trainers that familiarity with technology is a great importance for the professional translators (e.g., Anderman Bowker, 2001; 2013; Doherty, Kenny, & Way, 2012; Kenny & Doherty, 2014; Rogers, 2000; Way & Hearne, 2012). However, many researchers (e.g., Alcina, Soler, & Granell, 2007; Austerlühl, 2006; Bowker, 2002; Bowker & Marshman, 2009; Frérot, 2013; Kaminskiene & Kavaliauskiene, 2012) argue that translation curricula need

updating due to the professional market demands and highlighted the integration of technology and translation.

A number of scholars (e.g., Alotaibi, 2014; Gaspari, Almaghout, Doherty 2015; Jiménez, 2011; Kaminskiene & Kavaliauskiene, 2012; Korosec, 2010; Lim, 2013; Mikhailov, 2015) have done research on CAT competence; however, there seems to be no study investigating the CAT competence of Iranian translators. More specifically, the purposes of this research were (a) to compare Iranian BA and MA students of translation of their abilities on IT related competences, (b) to compare BA and MA students of translation in terms of their learning of IT skills in their translator training programs, and (c) to compare BA and MA translators' viewpoints about the significance of IT related competences in their professional activities. The research questions formulated for this research are as follows:

1. Is there any significant difference between BA and MA students of Translation Studies in terms of their abilities in the IT skills?
2. Is there any significant difference between BA and MA students of Translation Studies in terms of their learning of IT skills?
3. Is there any significant difference between BA and MA students of Translation Studies in terms of their viewpoints about the importance of IT skills?

2. Review of the Related Literature

2.1 Computer-Aided Translation

Hutchins (1998) notes that Computer-Aided Translation (CAT) (also called Computer-Assisted Translation) dates back to 1980 and the systems were developed in Japan. CAT, according to Palacz (2003), is a term used to describe computer techniques which facilitate the process of translation. According to Quah (2006), workstations known as workbenches are various tools and resources which are used by translators to facilitate the process of translation and management of work. These are translation memory, memoQ, electronic dictionaries, an alignment tool, terminology databases, terminology management systems, spell and grammar checkers and others.

According to Quah (2006), in order to perform some parts of the process of translation, the translators use computer. Thus Machine Aided Human Translation (MAHT) is the workbench of this process. It is a system which is known as a

workbench or workstation using other tools. The main point in this kind of translation is a human translator, using other tools such as spell checker, dictionaries and databases of previously translated texts. Translator's Workbench by Trados, Transit by Star or Déjà Vu by Atril are instances of popular MAHT system.

New technologies which can help translators are extremely expanded around the world. A machine translation system has been one of the most vital steps in translation. According to Aüstermühl (2001), MT can be defined as the computerized systems which "are responsible for the production of translation from one natural language to another without human assistance" (p. 157). As Quah (2006) states, creating a fully automatic high quality machine translation without human intervention was the first goal of MT, but it was an unrealistic idea that later was rejected.

Translation Memory (TM), as Palacz (2003) argues, is a database of previously carried out translations which are ready for reuse, and the use of the databases by means of TM is the most appreciated feature of CAT. According to Austermühl (2001), increasing the income and the consistency of translations are the two great advantages of TM. Austermühl (2001) states that contrary to machine translation which makes the translation automatic, translation memory allows translators to accept or reject an equivalent or segment proposed by the translation memory system. Some text types are more appropriate for TM than the others. The most appropriate texts for translation memory are texts containing repetitive elements such as technical documents, software programs, lab reports or catalogues and many others. When the text contains more repetitive terms, TM is more suitable.

Translation Consultation, as palacz (2003) argues, is a kind of automated dictionary which looks up the words in dictionaries during the translation. It is a popular CAT mechanism and is applied in most CAT systems. The dictionaries are classified into two kinds: built-in-dictionaries and user-created glossaries. The former are the expanded and general dictionaries and the latter are used for storing the specific terms.

Terminology management is considered as the most important CAT software, which helps in the use of specialized terms. There is no need to search for a specific term every time while



using this system. Some specialized terminology tools can be named as MultiTerm, Lexicon and Terminology in Déjà Vu X, etc. This type of software has some basic functions of corpus analysis, which can classify the word frequency of source text and can help translators locate terminologies from the aspect of word frequency (Erwen & Wenming, 2012).

2.2 Technological Competence

The EMT expert group (2009) defines technological competence (or mastery of tools) as one of the six areas of the key competences for translation services (i.e., language competence, thematic competence, information mining competence, intercultural competence, technological competence, and translation service provision competence).

Nowadays there is a vast collection of Information and Communication Technologies (ICT) tools accessible to translation. ICT can be defined as all tools which professional translators utilize, and these tools can be traditional or advanced ones. Internet, corpus linguistics and concordance generator programs are some examples. The most important of them is machine translation and computer-assisted translation including translation memory. IT skills nowadays are inevitable part of translator's work and a translator should possess the IT skills for improvement of their product (Blanc, 2013).

2.3 Computer Assisted Translation Teaching (CATT)

Barr (2012) argues that digitalization has not yet taken place in the language learning. This means that although many students are computer literate and use many digital devices in their daily life, but it does not mean that they can use computer very professionally in the process of translation or learning and have acquired the technological competence. As Kiraly (2000) states, translator competence is not just having the knowledge of correct equivalents in mind; rather, the translator should be skillful enough in using tools to achieve a high quality translation. Pym and Garcia (2010) point out that in the near future being an expert in IT skills will be more vital for translators than language mastery. Emphasizing the importance of IT skills, Mikhailov (2015) asserts that in this era, IT skills are indispensable part of a translator's job; therefore, this shall be considered immediately after language proficiency in the order of priority.

Nowadays the ability to utilize CAT tools for translators is a necessity as they

need to produce a high quality translation in a short time. In addition, the chance of finding a good job will be increased as most companies employ translators who can apply CAT tools in their work and can work with well-known software (Erwen & Wenming, 2013). Kornaki (2010) notes that students of translation learn the linguistic and translation skills during their studies and after graduation they encounter many difficulties in their career. According to Kaminskiene and Kavaliauskiene (2012), nowadays new competences for translation are required, and developing their professional competences up to a high level satisfying the need for their future work is the great challenges of universities in the last decades.

Teachers and students' beliefs and attitudes toward the integration of technology in learning and teaching are another issue. Many investigations have been done in this field; for example, Swain (2006) investigated the student teacher's self-assessment of combining technology and found that the most important problem was that the students were not prepared to remodel their beliefs about using technology and its beneficial effects on learning. A number of researchers (e.g., Albion & Etmar 2002; Persichitte, Caffarella, & Tharp, 1999) have found that technology courses have a significant influence on the students' knowledge and skills and can change their attitudes toward using it. An important factor which can change students' attitude is their motivation. As Kiraly (2000) asserts, in all educational conditions motivation plays a key role, and the instructor should act as a facilitator to guide the students who are less skilled in computer to increase their innate enthusiasm to voluntarily use computers. As Dornyei (2002) states, students will accept technology more easily when they feel it is profitable for them. However, Alcina (2008) notes that in the CATT literature, some studies revealed that students of Translation have phobia of learning the translation technologies.

Li (2007) states that translator curriculum should be designed according to the needs of the market, and changes must be done based on the evaluation of the local and international market demand. Khazaefar (1999) and Miremadi (2003) argue that syllabus and curriculum of translation education in Iran have received critical comments and need an update to keep up with the demands of the market, requiring that new courses should be added

to the curriculum to enhance the student's ability, knowledge, and skills.

In the present research, Mikhailov's (2015) questionnaire on IT skills was used. Mikhailov investigated Finnish translators' level of technological competences, their training of technological skills at universities, and the importance of IT skills in the translation profession. The results revealed that translators were competent enough at using basic IT skills such word processor and Internet, whereas they were not able to use MT software and HTML literacy. The results also showed that the proficiency in special software was dependent on the specialization of the translators rather than the age or training at the university. Further, Mikhailov found that training of the IT skills at the Finnish universities was inadequate and suggested that courses on Trados and other specialist programs be added to the curricula of translation. The results also revealed that the spreadsheet software, graphical image, HTML markup language, and machine translation were not important for the translators, while Internet search skills, word processing, translation memory software, and computer maintenance were reported to be the most important IT skills for the translators.

3. Methodology

3.1 Participants

The participants of this study were Iranian male and female students of Translation Studies at the BA and MA levels (BA=110, MA=100). They ranged in age from 26 to 56. BA students were studying at the Islamic Azad University (North Tehran Branch), Kar Institute of Higher Education, Islamic Azad University (Shahriar Branch), and Alborz University. MA students were also chosen from the Alborz University and Islamic Azad University (North Tehran Branch). All respondents were translators of English and Persian languages, and all were native speakers of Persian. Translation was the main occupation for 100 participants, while it was the additional occupation for 110 of them.

3.2 Instrument

The instrument of this research was a questionnaire on IT skills developed by Mikhailov (2015) (see Appendix A). This questionnaire consisted of four parts. The first part was related to the respondents' background (i.e., their age, gender, certification, specialized field). The other parts were concerned with the respondents' self-evaluation of their IT skills, their

evaluation of the training in translation technologies received at their universities, and their evaluation of the significance of various IT skills for the translators' activities.

In the second part of the questionnaire, the respondents were asked to assess their IT skills on a Likert scale with 5 points (0 = No Skill, 1=Poor, 2= Fair, 3=Good, 4= Excellent). In addition, they were asked to determine the translation memory software and machine translation they used. They were also requested to compare the traditional translation with the translation with the help of translation memory tools. Finally, they were asked to identify the online dictionaries and term banks they used in their translation activities.

The third part of the questionnaire investigated the teaching of the IT skills in the translation courses of the participants. They were asked to identify the skills on a Likert scale with 5 points (1=very few or no skill, 2= elementary skill, 3=basic skills, 4=many skills, 5= comprehensive skills). In the last part of the questionnaire, the respondents were asked to determine the importance of the IT related competences on a Likert scale with 5 points (1=Not important, 2 = Somewhat important, 3 =Rather important, 4=Important, 5=Very important). The IT skills evaluated in the questionnaire were Computer maintenance, Word processing and text formatting (e.g., Word), Spreadsheet software (e.g., Excel), Presentation software (e.g. PowerPoint), Image processing software (e.g., Adobe Photoshop), Markup languages (e.g., HTML), Translation Memory software, Machine Translation, Internet, Term banks, and Online dictionaries.

3.3 Procedure

This study was conducted in May, 2015, and the data were collected over a period of three weeks. Mikhailov's (2015) questionnaire on IT competences was first translated into Persian and then piloted in order to evaluate its quality before it was used with the participants. A Ph.D. holder in TEFL and eight translators were asked to assess the content of the questionnaire and check its possible ambiguities and problems. Based on the feedback obtained from the informants, some changes were made and then the revised questionnaire was administered to the participants of this research. The researchers presented enough information about the goals of the study in order to persuade the respondents to carefully answer the questionnaire.



4. Data Analysis

The percentages and chi-square values of participants' self-evaluation of their IT skills, their opinions about teaching of IT skills in the translator training programs and their viewpoints about the importance of IT skills were performed. In addition, the percentages and chi-square values for the use of translation memory and machine translation software and online dictionaries and term banks were calculated.

5. Results and Discussion

5.1 BA and MA Translators' Self-Evaluation of IT Skills

In the first section of the questionnaire, the respondents rated their ability for the ten IT skills. Results are summarized in Table 1. It is important to note that in this section the combined results for 'good' and 'excellent' and 'no skills' and 'poor' categories are reported.

Table 1: The Percentage of BA and MA Translators' Self-Evaluation of their IT Skill

IT skill		No skills	Poor	Fair	Good	Excellent	Chi-square	P
Computer maintenance	BA	3.8	7.5	34.0	36.8	17.9	47.679	.000
	MA	.....	1.0	41.3	38.5	19.2	44.077	.000
Word processing	BA	2.8	8.5	20.8	34.9	33.0	43.434	.000
	MA	.....	1.9	21.2	40.4	36.5	38.154	.000
Formatting and publishing	BA	11.3	15.1	25.5	24.5	23.6	8.623	.071
	MA	3.8	2.9	15.4	31.7	46.2	72.635	.000
Spreadsheets	BA	17.0	31.1	26.4	13.2	12.3	14.849	.005
	MA	17.3	19.2	40.4	16.3	6.7	31.865	.000
Presentation software	BA	11.3	17.0	25.5	16.0	30.2	12.396	.015
	MA	13.5	8.7	16.3	21.2	40.4	31.288	.000
Image processing	BA	15.1	30.2	25.5	15.1	14.2	11.453	.022
	MA	15.4	23.1	41.3	13.5	6.7	36.673	.000
Markup languages	BA	36.8	24.5	19.8	7.5	11.3	28.245	.000
	MA	35.6	30.8	20.2	10.6	2.9	38.500	.000
Translation memory	BA	33.0	24.5	21.7	7.5	13.2	20.887	.000
	MA	27.9	47.1	18.3	4.8	1.9	70.615	.000
Machine translation	BA	33.0	20.8	24.5	9.4	12.3	19.189	.001
	MA	28.8	38.5	10.6	20.2	1.9	43.404	.000
Internet	BA	9	8.5	11.3	16.0	63.2	130.038	.000
	MA	1.9	3.8	4.8	29.8	59.6	129.173	.000

Table 1 shows that BA students reported to be more competent at the following skills, respectively: 'Internet' (79.2%); 'Word processing' (67.9%); and 'Computer maintenance' (54.7%). On the other hand, they rated themselves 'poor' in the 'Markup languages' (61.3%); 'Translation memory' (57.5%); and 'Machine translation' (53.8%). The first high rated skill was the Internet, and the reason for this might be due to the availability of the Internet in comparison to the last decade as connecting to the Internet has become cheap and easy for translators as they can always surf the Internet and find out any information whenever needed. The second noteworthy score was the one for word processing program. The reason for this might be due to the fact that assignments are asked to be delivered by email, and students are familiar with the software, and this software is also taught in some universities.

Table 1 also indicates that MA students reported that they were 'good/excellent' at the following areas: Internet (89.4%); Formatting and

publishing (77.9%); Word processing (76.9%); Presentation software (61.6%); and Computer maintenance (57.7%), respectively. However, they rated their level of IT skills 'poor/no skill' for the following areas: 'Translation memory' (75%); 'Machine translation' (67.3%); and 'Markup languages' (66.4%).

The reason for the high rate score for Internet (89.4%) might be the development and the use of technology as an integral part of the daily life. Nowadays translations are carried out in word processing software and are delivered by emails, so the translators are motivated enough to take extra courses in institutes or learn it by themselves. The other reason may be that most of the translators specialize in technical fields and that would result in being skillful in such skills. The presentation software is the other skill which is rated highly, and the reason may be related to the method of the training for MA courses which is often PowerPoint based, so the students need to know how to work with it and have to learn it by taking classes or by themselves.

Both groups rated markup language, translation memory and machine translation as poor and the least satisfactory skills. The most probable reason for this result is that no course in this area is allocated in the curricula of Translation in the universities of Iran, and the students do not have any chance to learn these essential software by themselves. The other reason is that some translators cannot accept new concepts and tools and do not try to learn and use them, and their attitude towards learning and using technology is not positive.

Although IT skills are an essential part of a translators' profession, few of the respondents considered themselves as advanced users. The respondents rated their IT skills as excellent in word processing and internet and poor in using TM and MT, which this result is in line with the finding of Mikhailov (2014) as in his research younger translators were more competent in using computer doing most of their translation work with the help of word processor rather than CAT tools.

5.2 Translators' Use of Translation Memory Software

The participants were asked to determine whether they used TM software or not. In addition, they were requested to state the software they use the most. Results are presented in Tables 2 and 3.

Table 2: BA and MA Translators' Use of Translation Memory Software

	Never	Rarely	Occasionally	Often	Always	Chi-square	p
BA	33.0	20.8	27.4	15.1	3.8	27.113	.000
MA	35.6	26.9	27.9	2.9	6.7	42.731	.000

As Table 2 shows, BA translators (18.9%) made more use of TM compared to MA translators (9.6%). However, more than 50% of the respondents in both groups stated that they 'never or rarely' worked with TM software. More than 50% of the respondents reported that they had the least satisfactory skills in using MT, and almost half of them stated that they could not use the software at all. The first probable reason for this is that they do not pass any course in the university in this regard, and some do not possess the required IT skills and are not familiar with these software and the advantages of using them.

Table 3: Percentage of Translators' Use of Various Kinds of Translation Memory Software

	Trados	Wordfast	Omega	Déjà vu	Other	Nothing	Chi-square	p
BA	.9	47.2	3.8	.9	14.2	33.0	118.604	.000
MA	9.6	25.0	7.7	2.9	24.0	30.8	40.115	.000

Table 3 shows that considering BA students' responses, Wordfast software received the highest percentage, while Trado and Déjà vu received the lowest percentage in both groups' responses. Table 3 also indicates that 33% of the respondents did not use any TM software.

Wordfast received the highest percentage among respondents. The reason may be due to the advantages of this software in comparison to others. Wordfast has intuitive and customizable user-interface. It is quick to learn and easy to use and uses MS Word as its user interface, so learning Wordfast occurs naturally. The Wordfast is installed into the Word, so its manipulating is very easy as the users just click on the icon Wordfast and can choose an action. Users of Wordfast can use simultaneously only three glossaries, and the size of TM is up to 1,000,000 translation units per TM. Déjà vu offers no limitation in the number of entries in the TM. The only limitation is related to file size of the databases, which is 2 GB per file. SDL Trados allows to 3–5 users to employ TM simultaneously. The respondents were also asked to compare the traditional translation with translation with the help of TM tools. The results are presented in Table 4.

Table 4: Comparison between Traditional Translation and Translation with Translation Memory Tools

When comparing traditional translation with translation with the help of TM tools, which is more difficult for you?							
	much more difficult	somewhat more difficult	No difference	somewhat more easy	much easier	Chi-square	p
BA	20.8	32.1	15.1	21.7	10.4	14.094	.007
MA	23.1	52.9	4.8	15.4	3.8	83.404	.000

As Table 4 indicates, the majority of both MA and BA translators found working

with TM software more difficult than the traditional translation. In particular, MA translators (76%) considered using TM much more difficult than BA translators (52.9%). Most of the respondents reported that working with TM is difficult. The reason for this might be related to post-editing stage which is difficult for them, and therefore they cannot use the software appropriately or in some cases they cannot manipulate the translation equivalents. MA respondents rated higher because they may be accustomed to using more traditional translation and may have phobia of using technology.

5.3 Translators' Use of Machine Translation Software

Translators were also asked to report the extent to which they used MT software. In addition, they were requested to name the software they used the most. The results are provided in Tables 5 and 6.

Table 5: Percentage of Translators' Use of Machine Translation Software

	Never	Rarely	Occasionally	Often	Always	Chi-square	p
BA	22.6	29.2	31.1	14.2	2.8	28.906	.000
MA	23.1	18.3	23.1	24.0	11.5	5.712	.222

As table 5 shows, MA translators (35.5%) reported that they were more familiar with the MT software comparing to BA translators (17%). However, as Table 5 indicates, about half of the respondents in both groups did not use MT software.

Table 6: Frequency of Translators' Use of Some Types of Machine Translation Software

	Google Translate	Google King Site	Online Dictionaries
BA	4	.....	.....
MA	.....	4	2

As indicated in Table 6, translators in both groups of BA ($f=4$) and MA ($f=6$) had little experience working with machine translation software. The reason for this might be due to not having enough training in using MT.

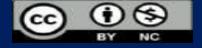
5.4 Translators' Use of Online Dictionaries and Term Banks

In the first part of the questionnaire, the respondents were also required to state whether they made use of online dictionaries and term banks. Additionally, they needed to state the kinds of online dictionaries they used the most. The results are provided in Tables 7 and 8.

Table 7: The Percentage of BA and MA Translators' Use of Online Dictionaries and Term Banks

	Never	Rarely	Occasionally	Often	Always	Chi-square	p
BA	.9	2.8	16.0	29.2	50.9	90.981	.000
MA	.....	2.9	12.5	17.3	67.3	103.769	.000

As shown in Table 7, the majority of both MA (84.6%) and BA (80.1%) translators made use of online dictionaries



and term banks. Table 7 also indicates that only 0.9% of BA translators never used online dictionaries. This result might be due to the fact that online dictionaries and term banks are popular among students due to the availability of high speed Internet. The other reason is that online dictionaries are up to date and can increase the speed of translation, and translators for whom the translation is the main occupation use online dictionaries more.

Table 8: The Frequency of Translators' Use of Various Kinds of Online Dictionaries

Do you use TM software?											
	Merriman Webster	Oxford	Long man	Trea sure	Concise Dictionary	Abadis	Mobi Dictio nary	Urban	Babyl one	Fast Dictionary	Tahlil garan
BA	3	9	30	...	...	...	4	...	6	...
MA	23	18	26	21	10	15	1	...	1	...	

As Table 8 shows, MA translators made more use of various kinds of online dictionaries than BA translators did. Regarding BA translators' choices, Longman gained the highest frequency ($f=30$), while Audio web received the lowest frequency ($f=2$). Considering MA translators' responses, Longman dictionary received the highest frequency ($f=26$), whereas Mobi dictionary, Babylone, and Tahlilgaran received the lowest frequency ($f=1$). Longman is the most used dictionary by BA and MA respondents, and the most probable reason is that it provides many examples in sentences, and it is user-friendly.

5.5 Translators' Opinions about Teaching IT-Related Competences in their Translator Training Programs

In the second part of the questionnaire, the respondents were asked to report the IT skills they acquired during their university studies. Results are provided in Table 9.

Table 9: Translators' Opinions about Teaching IT Skills in their Translation Courses

IT skill		Very few or no skills	Elementary skills	Basic skills	Many skills	Compre hensive skills	Chi-square	<i>p</i>
Computer maintenance	BA	41.5	31.1	18.9	5.7	2.8	57.679	.000
	MA	16.3	41.3	18.3	22.1	1.9	41.769	.000
Word processing	BA	20.8	28.3	36.8	8.5	5.7	36.547	.000
	MA	13.5	8.7	47.1	22.1	8.7	54.077	.000
Formatting and publishing	BA	52.8	15.1	15.1	11.3	5.7	74.566	.000
	MA	80.8	4.8	8.7	5.8	.....	172.846	.000
Spreadsheets	BA	51.9	19.8	17.9	6.6	3.8	77.585	.000
	MA	72.1	11.5	23.6	3.8	1.0	181.096	.000
Presentation software	BA	37.7	15.1	23.6	16.0	7.5	27.679	.000
	MA	64.4	5.8	9.6	11.5	8.7	129.173	.000
Image processing	BA	53.8	19.8	17.0	8.5	.9	87.208	.000
	MA	85.6	5.8	3.8	3.8	1.0	280.135	.000
Markup languages	BA	66.0	19.8	10.4	3.8	.....	100.717	.000
	MA	86.5	10.6	1.9	1.0	.....	212.385	.000
Translation memory	BA	69.8	15.1	10.4	2.8	1.9	170.698	.000
	MA	90.4	5.8	1.9	1.9	.....	237.538	.000
Machine translation	BA	65.1	18.9	12.3	3.8	.....	95.736	.000
	MA	88.5	9.6	.....	1.0	1.0	225.462	.000
Internet	BA	44.3	9.4	17.0	17.0	12.3	41.453	.000
	MA	84.6	5.8	1.9	4.8	2.9	271.865	.000

As indicated in Table 9, while reporting training in translation technologies, BA students considered the highest percentage for 'many skills/comprehensive skills' in the following skills: Internet (29.3%); Presentation software (23.5%); Formatting and publishing (17%); and Word processing

(14.2%). However, they reported the highest percentage for 'very few or no skill/elementary skill' in the following skills, respectively: Markup languages (85.8%); Translation memory (84.9%); Machine translation (84%); Image processing (73.6%); Computer maintenance (72.6%); Spreadsheets (71.7%); Formatting and publishing (67.9%); Internet (53.7%); and Presentation software (52.8%). These results imply that BA students were not taught to work with IT tools during their university studies.

As shown in Table 9, there were three areas that less than one-third of MA translators acquired more in their translation courses. These areas were (in descending order): Word processing (30.8%); Computer maintenance (24%); and Presentation software (20.2%). On the other hand, Machine translation (98.1%); Markup languages (97.1%); Translation memory (96.2%); Image processing (91.4%); Internet (90.4%); Formatting and publishing (85.6%); Spreadsheets (83.6%); Presentation software (70.2%); Computer maintenance (57.6%); and Word processing (22.2 %) received the highest percentage for 'very few or no skill/elementary skill' among MA students' responses. This result also indicates that training in translation technologies received by translators with a Master's degree in universities was insufficient.

Given the results of this analysis, it is evident that a large number of respondents have either acquired most of their technology skills themselves or have done so by attending additional courses, and the essential skills are not taught to the translation students. It also revealed that university curricula is inevitably behind the skills essential for working situations.

In Iran translator training program is focused on teaching abstract theories rather than working on practical skills. Further, translators are not taught to work with IT tools during their university studies, while they acquired computer literacy on their own or by attending some additional courses. These findings are in line with those of Mikhailov (2014) as most of his respondents reported that universities are behind the time and much more attention should be paid to educational technology.

5.6 Translators' Viewpoints about the Importance of IT Skills

The third section of the survey asked translators to evaluate the importance of the technical skills in their professional activities. The results of this analysis are

provided in Table 10. It is important to note that the combined results for the 'important/very important' and 'not important/somewhat important' categories are presented.

Table 10: The percentage of Translators' Opinions about the Importance of IT Skills

IT skill		Not important	Somewhat important	Rather important	Important	Very important	Chi-square	p
Computer maintenance	BA	4.7	16.0	22.6	37.7	18.9	30.321	.000
	MA	1.9	8.7	18.3	39.4	31.7	50.615	.000
Word processing	BA	2.8	2.8	16.0	22.6	55.7	99.849	.000
	MA	.....	4.8	3.8	21.2	70.2	121.15	.000
Formatting and publishing	BA	7.5	24.5	23.6	32.1	12.3	20.887	.000
	MA	20.2	14.4	13.5	20.2	31.7	11.000	.027
Spreadsheets	BA	17.0	39.6	20.8	13.2	9.4	29.283	.000
	MA	50.0	28.8	8.7	6.7	5.8	77.250	.000
Presentation software	BA	11.3	25.5	27.4	25.5	10.4	14.943	.005
	MA	49.0	18.3	13.5	14.4	4.8	59.846	.000
Image processing	BA	23.6	50.0	11.3	11.3	3.8	70.321	.000
	MA	55.8	26.9	4.8	8.7	3.8	101.28	.000
Markup languages	BA	12.3	17.0	15.1	18.9	36.8	19.943	.001
	MA	18.3	18.3	15.4	15.4	32.7	10.904	.028
Translation memory	BA	5.7	13.2	14.2	23.6	43.4	44.849	.000
	MA	5.8	14.4	12.5	24.0	43.3	44.077	.000
Machine translation	BA	10.4	17.9	13.2	23.6	34.9	20.038	.000
	MA	5.8	11.5	22.1	13.5	47.1	54.942	.000
Internet	BA	1.9	4.7	15.1	13.2	65.1	141.26	.000
	MA	1.9	1.9	26.0	5.8	64.4	148.98	.000

Table 10 indicates, concerning BA students' responses, five areas: Word processing (78.3%); Translation memory (67%); Machine translation (58.5%); Computer maintenance (56.6%); and Markup languages (55.7%) received the percentage above 50% for 'important/very important', while they reported the highest percentage for 'Not important/somewhat important' in the following skills, respectively: Image processing (73.6%); Spreadsheets (56.6%); Presentation software (36.8%); and Formatting and publishing (32%).

Regarding MA translators' responses, four skills gained the percentage above 50% for the 'important/very important' categories, respectively: Word processing (91.4%); Computer maintenance (71.1%); Internet (70.2%); Translation memory (67.3%); Machine translation (60.6%); and Formatting and publishing (51.9%). However, the Image processing (82.7%); Spreadsheets (78.8%); Presentation software (67.3%); Markup languages (36.6%); and Formatting and publishing (34.6%), respectively were the skills they did not consider using them important for translators.

BA respondents rated word processing, TM, MT and computer maintenance as important skills due to the reason that they are younger generation and have more tendency to integrate translation with technology and keep their software up to date to use the newest options recommended by the updated versions.

They scored the formatting and publishing as the least significant one and the reason might be that they think doing this skill is not their responsibility and this should be done by somebody else.

Word processing outweighs the other skills because nowadays translations are done by computers and are delivered by emails as a result of which a professional translator has to know everything about this highly valuable tool. MA respondents also rated Internet and Formatting and publishing as important skills, and the reason for this may be the connection to the world of knowledge via Internet and solving the problems of translation by connecting the Internet and accessing to many different kinds of information. The reason for considering publishing and formatting as an important skill is probably related to the mastery in all various aspects of computing that a translator needs to know as it helps increasing in their cost. MT and TM received high score by two groups, and this shows a tendency among translators towards using technology and the need for these software which speed their work. The respondents rated the Internet, computer maintenance, TM and MT as the most important skills. These findings are in line with those of Mikhailov (2014) as MT was not rated as the most important skill.

6. Conclusions

The purpose of this study was to determine the difference between BA and MA students of Translation Studies in terms of IT skills which they possessed and their viewpoints on the importance of CAT technology and teaching of IT skills in the Iranian context. The results showed that the BA and MA students of Translation Studies were limited themselves to word processing and Internet and were not familiar with CAT tools such as TM, MT, image processing, hypertext markup, and spreadsheet software. The level of IT skills of the respondents was not also satisfactory. Further, the respondents reported that they did not receive any training in the IT skills in universities and were critical about the curricula of Translation training which was not up to date.

This study highlights the need to teach translators CAT tools, which assist them to produce high quality outputs and prepare them to deal with the new challenges of today's market needs. IT skills of Iranian students is not at satisfactory level and needs improvement, so introducing CAT tools as an assistance to translators is a necessity. Changes should be



applied in the planning of their syllabus, and teaching of the technological tools should be offered to students of translation.

The present study concentrated on those translators who were studying at universities. Future researchers can work with freelancers or in-house translators to investigate their IT skills. The relationship between students' attitude toward CAT tools and variables such as gender, age, and field of specialization can also be used in another research. This study focused on students' attitude toward CAT tools; however, instructors' perceptions of CAT tools are open for further research. The results of this study were limited to translators who were studying at Azad universities in Tehran and Qazvin. Similar studies can examine the IT skills of students at state universities in Iran.

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Appendix A: IT Skills Questionnaire

1. Respondent's personal data
 a. Age: 25 or under / 26-35 / 36-55 / 56 or over b. Sex: male/female
 c. Degree: Master's degree/Bachelor's degree/Ph.D. in Translation Studies
 d. BA University: _____
 MA University: _____
 e. Other degrees/qualifications: _____
 f. Translation is your: main occupation/additional occupation
 g. Your field of specialization (multiple answers possible): law/administration/trade and economy / technology / fiction / multimedia / localization / religion
 h. Other specialization field: _____
 Please rate your ability in the following IT skills:

IT skill	No skills	Poor	Fair	Good	Excellent
Computer maintenance					
Word processing					
Formatting and publishing					
Spreadsheets					
Presentation software					
Image processing					
Markup languages					
Translation memory					
Machine translation					
Internet					

- Do you use TM software? (Always/Often/Occasionally/Rarely/Never)
 Which TM software do you use? Trados / Wordfast / Omega / Deja Vu / Other Version: _____
 When comparing traditional translation with translation with the help of TM tools, which is more difficult for you?
 1. TM is much more difficult 2. TM is somewhat more difficult 3. No difference
 4. TM is somewhat more easy 5. TM is much easier
 Do you use MT software? (Always / Often / Occasionally / Rarely / Never)
 Which software do you use the most? _____
 Do you use online dictionaries and term banks?
 1. Never 2. Rarely 3. Occasionally 4. Often 5. Always
 Which online dictionaries and term banks do you use the most? _____
 Comments: _____
 Which IT skills did you acquire during your studies and to what extent?

IT skills	Very few or no skills	Elementary skills	Basic skills	Many skills	Comprehensive skills
Computer maintenance					
Word processing					
Formatting and publishing					
Spreadsheets					
Presentation Software					
Image processing					
Markup languages HTML					
TM					
MT					
Internet					

- Other skills: _____
 Comments: _____

± Evaluate the importance of the following technical skills in the translator's professional activities

technical skills	Not important	Somewhat important	Rather important	Important	Very important
Computer maintenance					
Word processing					
Formatting and publishing					
Spreadsheets					
Presentation software					
Image processing					
Markup languages HTML					
TM					
MT					
Internet					

- Other important IT-related skills: _____
 Comments: _____