CAT Tools in Modern Translation Industry and Translator Training

أدوات الترجمة بمساعدة الحاسوب في صناعة الترجمة الحديثة وتدريب المترجمين

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Abstract:

This article seeks to explore the field of CAT (Computer-Assisted Translation) tools and their application in the translation industry and the necessity of integrating them in university curricula to turn out graduates with a significant knowledge and know-how of the new translation industry. The problematic turns around questioning the current situation of most Arab universities which have not yet adopted translation technology and new curricula, which puts graduates at the risk of not getting hired by LSPs. After exploring this field, we came out with the conclusion that most Arab universities still have not adopted the new technology which is according to most experts of the field inadequate and may marginalize future translators in the Arab world. We advise all stakeholders to work for the aim of establishing these tools as soon as this could be achieved.

Keywords: CAT tools; Curricula; Quality assurance; Translation; Translator training.

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1- Introduction:

As a result of globalization and the intensification of international commercial, political, media, economic relations and interactions, nowadays the flow of documents to be translated from one language into a multitude of target languages has dramatically increased. The speedy demand for their translation has also risen. Human translators cannot deal with these huge work volumes awaiting translation on their computers. Therefore, the need for the assistance of the machine is urgent. As an instance of the current

situation of the translation industry, Rolland (2016) speaks of a fast turnaround, multilingual documents, a great variety of file formats (Word, Excel, HTML, etc.), having to translate 45,000 words in 3 weeks, and 18 brochures each one containing 300 words in one week (Rolland, 2016). This would not be possible for a human translator to achieve within the turnaround indicated. He only can translate a standard number of 2000 words a day. Consequently, CAT tools (Computer - Assisted Translation) become a must, otherwise communication between different organisms in the world as well as commerce and business and other aspects of life would be seriously delayed. Now, are CAT tools well developed as to rely on them in assisting with performing the translation? To what extent could translators rely on them and how? Which CAT tools are the most practical? What is the most recent update in them? Then, what about traditional teaching of translation in universities? Is it still sufficient a training for the professional translators of today and tomorrow? What should be done in the Arab countries to enhance teaching translation technology? These are the questions that we are seeking to answer in this article. Firstly, we will begin with introducing CAT tools and their core components and functionalities.

1.0 What Are CAT Tools?

A Computer -Assisted Translation is a software used by translators and linguists to support the process of translation by facilitating it through the use of termbases, translation memories, dictionaries, machine translation software and other functionalities incorporated in any CAT tool (Kenney, 1999).

The acronym CAT, Computer – Assisted Translation, is "the process whereby human translators use computerized tools to help them with translation-related tasks." (Bowker, as cited in Šanca, p.13). The phrase "to help them with translation – related tasks" signifies that this tool does not do the translation of tasks for translators and linguists, but only helps them in doing it. Unlike a machine translation (MT) whereby the computer software like Google Translate is expected to handle the translation process of a document entirely by itself, a CAT tool like

Wordfast or Lilt does not claim to do an entire rendering of a text by itself. It rather assists the translator by performing tasks for them such as segmenting the text, suggesting previously memorized translations that match the new words and phrases from a translation memory, using the words and expressions translated in a specific way and stored in a termbase, etc. The difference between the two software items becomes now clear.

A very brief historical overview of the evolution of machine translation may be necessary here. CAT developed from machine translation (MT) on which research started in 1933 when Russian P.P. Telojamsky made a proposal on how to make a translating machine (Erwen & Wenming, 2013). In1947, Warren Weaver coined the term Machine Translation and advocated the development of automated translation (Cocci, 2007). The Cold War encouraged the design of machine translation software to translate the huge intelligence information amounts. Later in 1954, Georgetown University and IBM jointly developed a translation machine that was able to translate 250 words from Russian into English, thus opening the way for spending a considerable budget on conducting research in this field. This marked the beginning of an era of intensive research in computational linguistics to design a better software for automated translation in the USA (Erwen & Wenming, 2013). However, in the same country, in 1966 the Automatic Language Processing Advisory Committee (ALPAC) published a report, declaring that machine translation was inefficient, slow and costly ("The Failings of Machine Translation", 2013), thus ceasing to finance research projects in this field. However, research continued in Canada, Germany, France and Holland.

The Canadian Bureau of Translation designed in 1976 a system dubbed TAUM METEO to translate weather reports. It was designed to transmit weather information from stations all over Canada directly to the public in French with a system load of 30.000 words a day. Misspellings, grammar mistakes, blurred words and words not existing

in the French dictionary were reported; nevertheless, it reduced a third of the human cost in such a task (METEO: An Operational System for the Translation of Public Weather Forecasts). Research and development were carried on and several companies were involved in this field. It was in the late 60s and early 70s that a new approach to this field began to develop. Developers started to think that since the machine could not replace humans in translating efficiently, then translation software should be designed to assist human translators in doing their job easily and speedily (Cocci, 2007). In 1984, SDL TRADOS (TRAnslation & DOcumentation Software) was established in Stuttgart, Germany, by Jochen Hummel and Iko Knyphausen and entered the software market. In 1988, this company produced TED, a translation memory and in 1990 they launched SDL TRADOS MultiTerm which is a terminology database. A short time later, they developed WinAlign, the first alignment tool on the market. The 1990s witnessed a boom in the production of translation software, which became sophisticated and affordable to translators. Furthermore, the Internet enhanced the process of development by sharing translation outputs through server technology (SDL TRADOS, 2022).

So, the essential technology was developed in the mid-1990s (Garcia, 2014). The decade from 1995 to 2005 is classified as the classic CAT systems era (*ibid.*). The indicated period witnessed the birth of a myriad of translation software such as Wordfast that was designed by Yves Champollion in Paris in 1999 and has become the second most popular translation CAT tool in the world. Déjà Vu also belongs to that era. It was designed by *atril solutions* in 1993 to cater for its professional translation environment and was the first translation software to operate with Windows.

1.1 Main Components (features) of a CAT Tool

A CAT tool currently has four main components without which its functionality is seriously handicapped. These are: a translation memory (TM), a terminology feature (term base), a translation

management and quality assurance. Several other features could be included here. These are: quality assurance, search and replace functionality, concordance searches and text alignment functionality. Among these, the translation memory stands as the most valuable feature to assist in the translation process.

1.2 Translation Memory

First created in the 1970s, the translation memory TM has evolved tremendously thereafter, that now it is an indispensable part of any CAT tool or rather it is its core (Erwen & Wenming, 2013). It can be defined as a mechanism or linguistic database that stores translated texts and their original source texts while the translation process is being executed by the human translator. Initially, a TM is blank and is created by the translator who saves the segments or units of translation which he achieves and keeps there for future use in case he receives the same or similar texts like machine catalogs when it is developed periodically. In this case the same terminology and style guide are followed. It can also store paragraphs (SDL Trados), not only sentences which are generally recognized by periods.

All CAT tools such as SDL Trados Studio, Déjà Vu, MemoQ, Smartcat, Smartling, Matecat or OmegaT software contain a translation memory. When a new document is being translated by the human translator, the TM automatically retrieves stored identical or similar matches and suggests them to the translator (AutoSuggest), who decides whether to accept them as such, modify them or reject them. In this way, the translator does not have to translate the same sentence again and focusses, instead, on translating new sentences and ensuring consistency in the target language, which is much praised in the modern professional translation industry. The translation memory, thus, plays a significant role in speeding up the translation process, guaranteeing consistency of terminology and meeting the requirements of clients by delivering the translated work on time.

The translator may as well receive the translation memory from the client company to produce a translation in conformity with terminology and wording of the client. The client's TM keeps the secrets of that body so that only the client and the translator know about the content of the documents. The quality of the target text is ensured as the stored segments have been revised before and the focus of the human translator is now directed to translating and storing new segments. Not much text remains for the translator to work on if the translation is in a specialized domain like law or technology. Nowadays, language service providers (LSPs) and translation agencies receive huge amounts of documents to translate within fixed deadlines. Multiple target languages and text formats like PDF, Word, HTML, InDesign are required within deadlines that would not have been reasonable before the advent of CAT tools. The translation memory comes to rescue the translator by retrieving the segments which he/she or other translators have translated and saved in the TM, in addition to other features in the CAT tool that assist in accomplishing the assigned work on time and in accordance with the required quality. If such huge work had been assigned to traditional human translators, it would have been impossible to achieve within the deadlines imposed by globalization in the present time.

A multitude of documents have to be translated speedily for commercial, legal, economic and linguistic ends, to name only the most frequent ones. A translation memory is particularly useful when translating repetitive texts such as products manuals, etc. When a company develops a product, say a pump, and the user manual is translated by a translator and the wording and terminology are stored automatically by the translation memory, and suppose that a year or so later the same company further develops that pump and a new user manual is updated, the former translator, if he /she is given the same manual to translate, would find all text that had previously been translated ready in his/her TM, that now he/she only has to translate the recently added text. This is where a TM is mostly efficient. In other

cases, it might also relieve the translator to a certain extent, though not like in limited catalogs and similar publications.

Here we come to share the opinion of Krüger (2016) that translation technology is altering the translation process and the cognition of the translator. In the past – as well as nowadays with some translators – pen and paper or a word processing tool were used while now this old image of translation is speedily disappearing, giving way to translation agencies with translators executing collaborative work in different parts of the world, working on the same projects and viewing exactly at what point other colleagues are working. Evidently, this could be facilitated by CAT tools. Otherwise, it would not be imagined how they would face up to the current deluge of documents to be translated.

Macklovitch, Simart & Langlais (2000), from Canadian institution **rali** which owns *TransSearch*, a web devoted to the online publication of the translation of Canadian parliamentary debates between French and English, use a somewhat different definition of a translation memory. They describe it as "… an archive of existing translations, structured in such a way as to promote translation re-use." (p.1). SDL Trados and other translation software companies describe a translation memory as a database or system (Miangah, 2008). In *TransSearch*, it is not the TM that suggests automatically exact or fuzzy matches of previously translated segments; it is rather the translator who submits queries to the software and then chooses the appropriate translation (Macklovitch et al., 2000). The queries are in the form of single words, expressions or full sentences.

1.3 Terminology Management

It has become crucial currently for translation agencies, LSPs and freelance specialized translators to create and maintain an industry- specific terminology database to carry out their translation projects. The consistency of terminology in a given field, say in electronic documents, is paramount. If several translators are working on a large project translating documents related to electronic equipment, then the terms to be used in the target text

must be unified. All translators working simultaneously on the same documents should utilize the same terms. Gašpar, Seljan and Kuciš (2022) maintain that if terminological consistency is not pursued in translating similar documents, then this would seriously endanger the quality of the output text and harm the reputation of the agency providing the translation. One of the possible impacts is to cause the reader's misunderstanding of the target text, which is certainly not the ideal objective of translation. To prevent this, CAT tool software designers such as SDL Trados and MemoQ developed modules to be used along with translation memories and other functionalities to collect and standardize terms related to specific fields.

(Fernandez – Parra, 2010, p.8) defines the termbase as, "a bilingual or multilingual terminological database that contains terms, either as single words (e.g., aneurysm) or as multi-word items (e.g., soft contact lens."). It is the fruit of individual and collective translations of the whole team of the agency. The same vocabulary, style and terms should be used consistently in any translation project in any field. The termbase not only lists the terms as entries, but also includes their part of speech, gender and terminological status (Fernandez – Parra, 2010). Additionally, a translator may accept the term and style preferred or proposed by clients or may even adopt the termbase of a client and use it instead of his or hers. It can also be made to suit a geographical region or be specific to a determined translation project (Fernandez – Parra, 2008).

Choudhury and McConnell (2013) contend that these term glossaries are used to determine how certain words, phrases or proper names should or should not be translated. The aim of a less costly translation is not the unique one, but rather the consistency of vocabulary and style and the uniformity of the translation of frequently repeated phrases are a sought-after objective as well. On the other hand, the correctness and consistency of terminology of the target text could be effectuated by quality assurance tools of the type of Acrolinx, D.O.G. Error Spy, or ApSIC Xbench, to cite only a few (Krüger and Piqueras, 2015).

1.4 Translation Quality Assurance in CAT Tools

To ensure that in a translation project the target text is free of any mistakes of whatever kind, the translator should run checks to correct all mistakes. This step is necessary to keep the LSP's reputation and business going on smoothly and making profits. In the opposite case, if output texts contain errors whether linguistic, relating to formatting, consistency of terminology or style, the client would be dissatisfied and would probably cease dealing with this translation agency. The least of mistakes is not tolerated in nowadays translation business. Even extra spaces between words, space before commas, unpaired parentheses and the like would flag *fail* on a CAT tool to one's translation. Translation project managers are not tolerant with their contracting translators if they commit such mistakes, because their jobs would be at stake. Taking this situation in consideration as well as the lack of time for translators and tight deadlines to deliver the achieved translations to clients, quality assurance software has been designed to work in practically all CAT tools software. This software verifies all kinds of typos and other inconsistencies and proposes to correct them automatically, or wait for the linguist to check the propositions and then decide whether to take them or insert their own corrections.

In addition to the abovementioned inconsistencies, others could be included such as changing numbers or content for email addresses or URLs, inconsistent HTML, different brackets (Timofejeva, 2020). Missing terminology, inconsistent translations, fuzzy matches are also shortcomings that are taken into consideration by quality assurance (Memsource, n.d., "What is Linguistic Quality Assurance?") We should as well consider here poor style, incorrect grammar, improper register, broken tags, wrong numbers and unlocalized units of measure. In addition, other inconsistencies could be counted here such as incorrect decimal separators, abbreviations, source and target texts' length, non- translated segments or non- segmented texts (Petrova, 2019). All these weak spots should be settled before delivering the end translation to the client. In the past, the linguistic revision was done manually and was painful and time consuming. There are

mistakes that are hard to identify by the bare eye. However, with the speedy advance of CAT tools software, quality assurance modules are incorporated in all CAT tools.

Checking for translation quality could not be left to this software alone as it is incapable of understanding the meaning of text. It considers form only, regardless of meaning, and this could make it skip semantic errors if the form looks correct. That is why the human translator should verify each and every single mistake. Worse, this QA software has a tendency towards flagging much more false mistakes than real ones. Therefore, human intervention is indispensable. A translator should have a complete command of all the components of a CAT tool. The time of a computer word processor and online dictionaries to translate is past. Present LSPs do not have patience and time for such traditional translators. Non-technical savvy localizers are not accepted. Project managers judge them by such technical matters as quality assurance and CAT tools command. If they see that a translator does not know how to use QA tools as indicated by the number of inconsistencies in their production, they believe that they are also sloppy with managing file formats, and other functionalities of a CAT tool, and in the end, not submitting a quality translation. Therefore, a translator should have total command of CAT tools before seeking to work for a translation agency or as a freelancer. Translation vendor managers are very sensitive to this point.

It would be interesting here to list some of the most popular QA modules. We could give the names of 5 ones, which are: Xbench, QA Distiller, Verifika, ErrorSpy and Linguistic Toolbox, to mention only the most salient ones (Petrova, 2019). All of these could be used in CAT tools with bilingual texts and all file formats whether HTML, Excel or any other (Technolex Studio Studio, 2022). They all perform standard checks. Yet, each one has some specificities that are inherent to it. For example, Xbench performs online and offline verification of source and target texts. It can use terminology sources in most CAT formats like TMX, XLIFF, Trados, Wordfast, memoQ, Déjà vu, IBM Translation Manager and others. This

helps users focus on terminology, not its source during work (Xbench.net, 2021).

QA Distiller was developed by Yamagata Europe, established in Ghent, Belgium, in the last decade for performing checks on bilingual files and, like all other QA modules, it supports most common files as Xbench, for instance. However, it supports other extra files not in Xbench such as TMX (Translation Memory eXchange), Worldserver XLIFF, Wordbee XLIFF, Memsource XLIFF, Fluency Now XLIFF and Catalyst 11 XLIFF. It also checks language-independent and dependent formatting, regular expressions and jumps directly to the location of the error in the format's proprietary editor and the internal X-Editor (Untranslatables are dealt with as well).

Verifika is a professional QA tool that has almost similar features as its counterparts. Yet, some of its new features may distinguish its performance. These may be summed up in a developed reverse check for terminology and untranslatables, language – specific user- defined checks, false positive rate reduced for tags and numbers, improved mathematical sign check, UX report for window, integration with cloud platform Transifex, Crowdin and SmartCat and Memsource. It has also introduced an experimental user – defined "ignore" (Verifika QA, 2021).

To conclude this section on QA tools, it is reasonable to say that this quality software cannot replace a professional human editor in correcting a translation for at least the following reasons. Firstly, the artificial tool does not understand the meaning of the text, so it cannot discover semantic errors and propose corrections. Therefore, if a sentence or phrase respects formal requirements, but semantically indicates illogical content, the tool would not be able to detect the mistake and would show it as correct. For instance, if it meets a sentence like "The bucket drank water," it would not realize the illogicity of the content and would, therefore, not signal it as erroneous. Moreover, this software is error hungry and would display a greater number of mistakes than real. Thus, not all errors flagged should be taken at face value. The translator or editor should verify and then make their decision.

Conversely, not spotting any errors in a text or even a sentence does not mean there are not any. The software can only help partially detect errors and prevent the editor from abusing their eyesight. It has its merits and demerits.

These are core components of any CAT tool, and the modern translator has no way to escape translation technology if they wish to be accepted by translation agencies whether as an in-house or freelance translator. Some scholars even believe that a traditional translator, i.e., one who does not utilize technology in their work, could eventually be completely eradicated from the business of translation (Pym, 2013).

2.0 Adoption of CAT Tools in Translation Departments

We notice nowadays that most translation programs throughout Europe, the USA, Canada, Russia, Qatar, etc., have adopted CAT tools in training would-be professional translators. This decision is the right one to take, because if they continue to teach in accordance with old methods and strategies, their graduates will have difficulties in getting recruited or accepted to work online for translation agencies. We know that traditional translation programs offer courses in language acquisition, translation theory and techniques, but not CAT tools. Therefore, those courses were designed to fit an era of translation activity that is almost past by now. The new translation market is so different from the traditional one in that the translation workflow in a translation agency is fully digitalized and is shared by several agents such as project managers, translators, terminologists, reviewers, revisers, proofreaders, etc.

It is no longer the translator taking all the roles from accepting a project from the client to completing it and submitting it to that client. It is a shared group work now. The professional translator can change roles from vendor manager to reviewer to proofreader to businessman (Šanca, 2018). They must also be a domain specialist like law or economics, and a technology savvy, and be able to share a project with several other translators from different parts of the world at the same time if required. It is

no longer a matter of a translator who translates texts from a great variety of domains.

Traditionally, student translators were taught translation theory, language command and fair knowledge of the cultures of the languages they were supposed to master. Translation courses were teacher centered and did not establish contacts with translation agencies to allow students to have an idea of how modern translation market was going on when CAT tools were at their experimental stage. All this background is important, but it is no longer sufficient in modern translation market (Šanca, 2018). Pym (2013) advances that eventually traditional translation would disappear from the market. It would be a question of survival. Today even with student training according to current curricula, many employers find them still lacking in a training suitable to the market needs and wants. Liu states:

From a popular utilitarian view, being awarded a Bachelor's degree in translation only means that the candidate has fulfilled all the academic requirements and is thus eligible for graduation; more often than not, the graduate will prove incompetent for the actual practice in translation industry. (Liu, as cited in Henter, 2015)

Marchenko and Kolobkova affirm this penchant among employers, "As reported by Canadian Translation Industry Sectoral Commission (1999, p. 19), many complaints from employers in the translation industry about graduates mainly revolve around their narrow exposure to culture, lack of practical training, and difficulty in working."(p.324) This confirms unsatisfaction by employers, though in general. Other employers think of new recuits as lacking preparation to deal with specialized translation, being unfamiliar with terminology management and information technology, inability to organize themselves autonomously or work in teams, solve problems or establish and effectively manage interpersonal relations on the job (Mauriello, as cited in Kiraly, 2015). To surmount this handicap, some translation companies offer their newly recruited translators an in-house training and old translators' supervision before they are allowed to translate independently.

Students and translators would have to keep up with translation technology developments, and probably prepare themselves to be mostly post-editors. Pym (2013) further contends that the translator would shift from the generative to the selective process, i.e., from translating to selecting the translations suggested by the CAT tool.

To achieve such goals of a modern professional translator, translation departments or programs have to adapt their curricula to the new market reality. Much more focus must be devoted to training students on CAT tools and establishing internships with language service providers for their students to get a realistic experience, and not wait until after graduation which would be somewhat late and embarrassing. Students must also be trained to run translation business. Hence, they need to be trained not just educated. The translation curricula need to be more employability- and practice -oriented (Šanca, 35).

2.1 Required Competences

In order to train future professional translators, an appropriate curriculum has to be designed to take into consideration the competences needed to perform translation in accordance with the dictations of the modern market. What are these competences and why do "translators" need them and cannot do without them? Neubert created in 2000 a model with 5 competences which are: language, textual, subject, cultural and transfer competences. He thought at that time that these were enough to enable a translator to produce an equivalent target text. By language competence he meant a fair command of two languages was necessary, and by textual competence he meant having a proficiency in discourse as to be able to identify text features. As to the third one, that is cultural competence he contends that it allows the translator to handle cultural aspects of a text. The fifth one is the transfer competence which equips them with the relevant strategies to transfer information from ST to TT (Šanca, 21).

Subject competence according to Šanca needs to be clarified. Most university translation programs neglect this aspect and do not offer students

the specialization domain in which they would be working after their graduation. Rarely did curricula include a translation specialism like law, business, diplomacy, i.e., training them in one domain for the sake of mastering it and be competent enough to translate essentially in it. We mean here traditional programs as in Algerian and Saudi universities, for instance. Neubert (2000) believed that encyclopedic and highly specialized knowledge of a subject of translation were not necessarily active for translators. However, translators have to know how and where to get them when needed. In this context, he further said, "Translators don't know everything and they need not know everything but they must know where to look for it and where to find it" (Neubert, as cited in Šanca, p.22).

Yet, with the current situation of the translation business, Neubert's opinion might not be so valid and a need for a specialism for professional translators tends to be confirmed. šanca affirms that translators could not translate all types of texts just by knowing the manner and means of accessing the information related to a given specialism as they used to do traditionally. šanca wrote, "(…) a need has emerged for a translator to find a specialism, a field about which he does know everything. Professional translators are no longer expected to be able to translate any kind of text, they have become translators-specialists on a specific domain, with some experts even advising students to only pick a single domain*"* (P.22).

In addition to Neubert's model of competences of 2000, Göpferich established in 2009 another model of competences consisting of the following: communicative competence in at least two languages, domain competence, psycho-motor competence, translation routine activation competence, tools and research competence, strategic competence and motivation (ŝanca, 22).

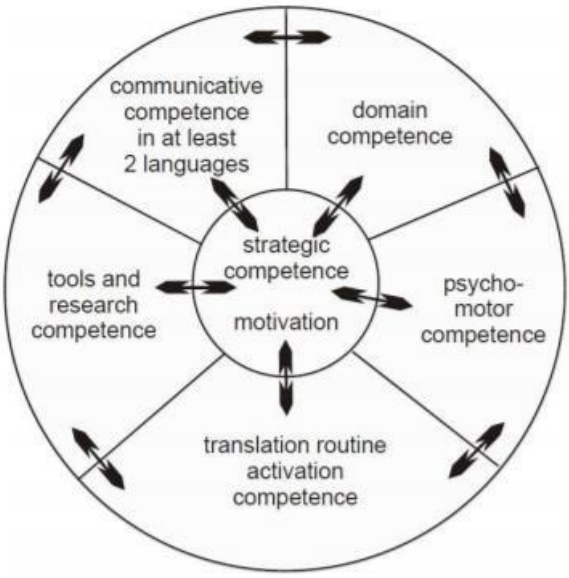

Figure 1: Translation competence model according to Göpferich/Jääskeläinen (2009: 16). (In Šanca, P. 21)

The two additional competences are psycho-motor competence and tools and research competence. This means that Göperich believes that Neubert's model was not enough and that these two points had to be added to the diagram to train translators fit for the translation market of 2009.

For Krüger and Piqueras (2015), the psycho-motor competence concerns mostly tasks related to administration and project management such as storing and organizing clients' files for a translation project and automating them to save time for formulating sentences, etc. (ŝanca, 23). The tools and research competence regards, in addition to CAT tools, the management of other tools such as email applications, navigation tools, FTP clients, etc. (ŝanca, 23).

In 2009 the European Master's in Translation (EMT) Expert Group created a competences model for the training of European translators in accordance with market requirements and upgraded Neubert's competences model of the same year to include other competences among which the translation service provision competence. The latter incorporates tasks such as knowing how to follow market requirements and job profiles, organizing

approaches to clients, negotiating with the client to define deadlines, tariffs/invoicing, working conditions, access to information, contract, rights, responsibilities, translation specifications, tender specifications, knowing how to plan one's time, stress, work, budget and ongoing training, etc. (EMT Expert Group, Brussels, 2009).

Figure 2: Competences for professional translators, experts in multilingual and multimedia communication by EMT Expert Group (2009)

Many tasks have been incorporated to this competences model with the aim of training an up-to-date market oriented competent professional translator. This model, I think, is valid for our students in Arab countries since the translation market now is international. The Internet has made translation jobs available worldwide.

Later, another standard of quality in the European Union came into being in 2015, that is the international standard ISO 17100: 2015 (ŝanca, 35), that set up the competences model in the following points:

1. translating/interpreting competence;
2. linguistic and textual competence;
3. searching strategies and research competence;
4. cultural competence;
5. technical competence;
6. entrepreneurial competence;
7. inter-personal competence. (ŝanca, 2018, p.35)

Translation agencies and freelancers should obtain this ISO certification to deliver quality translation service and win client confidence that the service is in conformity with the latest international quality standards. It was revised and confirmed in 2020, which means it is the latest version. Students have to be aware of it and to comply with it, and they must be trained to look forward to any new developments in the market. Eventual evolutions are, of course, possible, and students should keep pace with them if they do not wish to be out-of-date.

2.2 Project-based Learning and the Situated Translation

Practice of real-life translation is a must during graduation years. Learning about technology, project management and customer relationships strategies is not enough (ŝanca, 28). Students should practice even before graduation through collaborative work with, say, non-governmental organizations as some universities are doing now. This is called situated translation and can be done through projects that would allow students to practice taking real projects of translation. In this manner, students are provided with the subject (specialism), psycho-motor, and tools and research competence (ŝanca, 29), as a completion to the competences that universities are developing, that is language, textual, cultural and transfer competences (ŝanca, 29). It is also a good opportunity for students to get a training of subject such as legal, economic, business, commercial and medical texts. Generally, subject is not offered by translation courses since the latter are delivered in languages and translation, philosophy and arts

colleges, which lack subject specialist faculty. In addition to project-based learning, universities can hire specialized faculty from other colleges to deliver lectures on specialized subjects. For instance, the college of languages and translation can hire a law faculty member from the law college, and so on. Inviting external specialists would be a good solution as well (ŝanca, 29).

Other solutions could also be provided by external specialists from LSPs to train students on project management, customer relationships and technology proficiency (ŝanca, 29). Sometimes, translation course instructors happen to work in LSPs, and thus benefit students by making them take part in real projects.

Furthermore, to better prepare students for professional roles, student-centered learning should be stressed. The profession is highly demanding and students should keep pace with the market demands. To accomplish that, students should be motivated to pursue autonomous learning that is a guarantee to adapting to future technological and entrepreneurial changes. To achieve this aim, instructor and students should have a curriculum that promotes self-organization of skills and knowledge to reach highly autonomous learning (Kiraly, 2015). This can only be realized by encouraging students to have personal interest in the learning process and obtain high motivation in it (Piotrowska, 2012; Pym, 2013).

Pym stresses interest and motivation in self learning because the tools and procedures used currently in professional translation are prone to change or evolve in two years or less. Thus, students have to be trained to adapt themselves to upcoming change in the era of computer hegemony, he wrote:

Students should not learn just one tool step-by-step. They have to be left to their own devices, as much as possible, so they can experiment and become adept at picking up a new tool very quickly, relying on intuition, peer support, online help groups, online tutorials, instruction manuals, and

occasionally a human instructor to hold their hand when they enter panic mode. (Pym, 2013)

The use of CAT tools helps students develop life-long autonomous learning that is required by Pym. By using them, a businesslike environment is created and students can take up different roles of a real workflow, from translator to proofreader to reviser, to vendor manager. In this way, the learning process is taken up by themselves, and they are not staying passive and receptive as in lectures. The use of cloud tools is equally beneficial because students can pick up their assignments from any computer at any time and endeavor to respect deadlines so that their colleagues can do their part of the work on time such as revising or terminology management (ŝanca, 32). This being said, the traditional university course is not to be neglected. The learning of language, culture, theory of translation, techniques at which universities are effective is equally important. This aims at connecting academia to the translation industry and creating a complementarity of both.

To ensure success of training, students should repeat project-based practices of all the roles they take up in a life-like situated translation throughout their graduation. If they only know about the tools and procedures of professional translation, they would not be able to practice it easily after graduation. The craft has to be learned and practiced before graduation so that once on the terrain students are capable of starting to work for translation agencies and not wait to get another training in these agencies. Repetition is the key to success (ŝanca, 67).

2.3 Learning the Usage of non-CAT Tools

In designing a course curriculum, the inclusion of non-CAT tools is as significant as CAT tools for the realization of translation projects. Similar to CAT tools, the latter also assist translators in automating the work and allowing for more time to concentrate on the translation process itself such as seeking accuracy, formulating sentences, etc. Here the talk is about search engines, collaborative platforms, text editors, file managers, file converters, OCR, voice recognition tools, FTP clients, e-mail applications,

etc. (ŝanca, 68). Tasks like invoicing, file management, communication with clients, domain researching could be automated or reduced for the translator (ŝanca, 68). Thus, non-CAT tools are also important for students to learn in order to reduce wasted time on doing these tasks manually which would be inconvenient in the era of 'lack of time' by definition.

Conclusion

Now it is clear that CAT tools have come to give a great boost to the translation industry, making the output clear, consistent and rapid. Big translation projects could be achieved rapidly by translators working from different parts of the world and the translation quality assurance is made easy by a software, relieving translators from painstaking work. This new reality makes us believe that traditional pen-and-paper translators are having it hard to curve a place in this industry because of their ignorance of CAT tools. Universities are also called upon to introduce these tools in their translator-training curricula and cooperate with translation agencies to prepare students for the market. The emphasis should be put on Arab universities to catch up with translation technology. More research should also be made to adapt translation curricula to our Arabo-Islamic reality, not just copy from the European Union.

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