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Methods of Instruction and the Use of New Technologies in Translator Training¹⁾

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In 2007, I examined some tools that could potentially prove useful in translator training. This article stated that in today's society, in which dizzying technological advances are taking place, new technologies have become essential tools and their mastery is a *sine qua non* for accessing many jobs. Therefore, despite the challenges they might pose, these tools are now requirements for teaching any subject. Translator training is no exception. Time has passed and, at the same time, experience has grown along with advances in the field of new technologies. Many tools which aim to help translators fulfill their tasks have been improved and expanded,

1) This paper derives from a conference presentation at the 2nd Cologne Conference on Translation, Interpreting and Technical Documentation (CGN18), 29-30 November 2018.

such as the different translation memory suites or the corpus management programs. The purpose of this article is to broaden the debate on whether technology supports translator training and what its advantages and limits are, providing examples of the use of new technologies in translator training. It is not exhaustive, but it aims to highlight the diversity of possible applications through a pedagogical approach.

►Key Words: Translator training, new technologies, pedagogy, learning styles, learning theories, assessment

1. Translation Competence and Translator Training

In the article published in 2007 I suggested how new technologies could improve the professional level of our students, as well as become a pedagogical tool to achieve crucial skills, such as student autonomy and assessment or collaborative learning and working.

Over the last decade, both the translation industry and the translator's workplace have undergone huge changes due to the accelerated pace of technological development. Technology is pervasive in the translator's workflow (O'Brien, 2012). It offers the opportunity to be more efficient and to produce higher quality work but can also bring the disadvantage that customers exert pressure on translators to produce more text in a given time, sometimes at a lower

price.

In general, authors tend to argue today that technological tools should be taught because they will help translators to meet the demand of future clients and companies and to better prepare them for “real life” (e.g. Plaza Lara, 2014 and 2016; Sikora & Walczyński, 2015; Cuminatto et al., 2017; Mellinger, 2017; Collantes et al., 2018; Rodríguez-Castro, 2018).

Translation theorists propose diverse subcompetences and skills that make up translation competence - the identikit of a professional translator. However, when framed in the context of work reality, I suggest taking into consideration the competences listed in the *Competence Framework 2017* prepared by the European Master’s in Translation (EMT) Network (translation service provision competence, language competence, intercultural competence, information mining competence, thematic competence, technological competence) and in whose categories we can subsume the skills I mentioned in the 2007 paper (linguistic and cultural skills as well as skills in translation and research, and professional skills like terminology management, proofreading, quality assurance, translation project management, teamworking ability, and learner autonomy).

These competences include subcompetences such as pre-editing, machine translation (MT) and post-editing, use

of editing tools, corpus management programs and translation memories (TM), file transformation, web management programs and basics in programming, and computer-aided translation tools (CAT tools) in general. Finally, some personal and interpersonal competences like “[working] in a team, including, where appropriate, in virtual, multicultural and multilingual environments, using current communication technologies” (EMT) (cloudworking, crowdworking) can also be considered pillars on which to base instrumental or procedural skills. They partly belong to the so-called “soft skills”, but I would like to underline that they are, rather, “bold skills”, as they prepare translators in a cross-cutting way for future global changes and social developments that cannot be anticipated (see Cinque, 2016, for further insight into soft skills). Although the European project TUNING for improving higher education institutions began many years ago, and despite the fact that the related Bologna Process should have highlighted soft skills and pushed their importance, universities are still far from adopting and enhancing them. Yet, decision-making and problem-solving, critical thinking, novel and adaptive thinking, virtual collaboration and other soft skills will help future translators survive in the job market and should, at least implicitly, be integrated into the training curriculum.

Furthermore, I would like to point out that trainers

should reflect on the learning process. Learning can be spontaneous or intentionally directed towards a specific goal (always in formal training). In this way, studying, experiencing, and training form an inextricable whole. There are several learning theories adapted to different learning types which CAT tools do allow for consideration.

The first example is behaviorist theory (Skinner, 1938) where immediate feedback and positive reinforcement are applicable, but where negative reinforcement and even the feeling of punishment can arise when a learner sees that he or she has failed. Experiential learning or problem-based learning (Dewey, 1938), which is closely related to trial and error (Thorndike, 1898) or the problem-solving method (Barrows, 1986), offers experience as the basis for learning and can be considered relevant too. Cognitive theories (Tolman, 1948; Piaget & Cook, 1952; gestalt psychologists) advocate explaining learning processes by analyzing the mental processes involved. Shaffer's new trend of authentic professionalism (2005) is also a supporting theory, as well as the older problem-based learning. In addition, it is obvious that constructivist collaborative learning in the footsteps of Vygotsky (1978) also fits the professional concept.

As Li (2018) affirms, mixed approaches have their advantages. While the author considers it advantageous to expose students to diverse experiences in order to prepare

for the diversity of the demands of real clients, in my opinion learning processes must also be adjusted to different existing learning types according to the prevailing learning channel (visual, aural, verbal, physical, logical) (see Rolfe & Cheek, 2012, p. 176), based on Gardner's (1983) theory of multiple intelligences, as well as the prevailing method (social or solitary). The different learning goals in translator training enable these aspects to be combined so that trainees may learn to cope with the distinct demands of the job market. In addition, the different learning styles can be considered in this way (although there are no pure learning styles and they are usually mixed, it is possible to talk about a dominant style or styles of learning) (see Rolfe & Cheek, 2012, pp. 176-177).

Finally, I would like to emphasize that procedural skills cannot and must not be separated from declaratory skills, as the latter are the basis of the former and both are interrelated. Expository techniques (masterclasses, didactic texts and instructional videos), rejected today by many theorists, can nevertheless be useful, since students receive more information about declarative knowledge in less time, which will provide foundations for future learning.

2. Translator Training: Competences in and Exercises with Technological Tools

The following examples are drawn from the personal experience in translator training, more specifically training from three academic years (2015/2016, 2016/2017 and 2017/2018). Our general proposals are aimed at practicing linguistic and ICT skills as well as professional habits with Spanish mother-tongue learners who have studied German for three years (225 hours, Common Reference Levels A2 - B1), have learnt to translate general texts from and into German, and are now being introduced to translating specialized texts. The subsequent units are part of the training program during the second semester of the fourth and therefore last academic year and are taught in the framework of a course called "Specialized Translation", focusing on texts from the economic and health care sector. The first unit was implemented in 2015/2016, the last three units were only implemented in 2017/2018. They then were provided one after another, with the objective of strengthening and complementing skills and knowledges. Our intention is to gradually steer students toward autonomous learning and prepare them for future lifelong learning.

2.1. Machine Translation and Post-editing

The main objective of the first training unit was to identify differences between the results of an automatic translation and the post-edited text in order to improve the diagnosis of errors, make students aware of their shortcomings and increase their metacognitive competence, of course, besides introducing in the use of automatic translation (AT).

The texts to be translated came only from clearly defined sectors studied in detail in previous sessions. This would reduce the error frequency. Students had access to the internet, to all translations and glossaries produced during the course, to reference materials both online and on paper, and to translations made and corrected during the course. Corrections of the output of the automatic translator were made only when absolutely necessary. Style errors, for example, did not count. In this sense, we expected what ISO 18587:2017 refers to as "light post-editing" - that is, to correct only "to obtain a merely comprehensible text without any attempt to produce a product comparable to a product obtained by human translation".

The students translated five texts of different length (126-512 words) on the same topic (articles from the financial sector in a non-specialized newspaper or news from financial newspapers). Spanish was the source language and German the target language - that is, they had to translate

from Spanish into their second foreign language. The work flow consisted of using DeepL (<https://www.deepl.com/translator>) first as an MT tool and then carrying out post-editing of the resulting text. The students had 45 to 90 minutes to translate each text. According to the grading scale, students had to have at least one less error than DeepL. As Läubli & Orrego-Carmona (2017) says, “[I]f Google Translate is better than some colleagues, then these people are no longer colleagues”. In other words, the result of the translated text produced by humans should be at least slightly better than that of an automatic translator, otherwise the human translator becomes obsolete.

The teaching strategies, therefore, apart from computer assisted learning by the use of AT were, on the one hand teacher-directed at the beginning, when the concept of (light) post-editing and the handling of DeepL was introduced, as well as data ownership and data security issues. In addition, they were learner-directed when they were asked to justify their translation options and to proofread the post-edited texts of their classmates.

Learning theories we considered were experiential learning as well as trial and error while getting accustomed to the program. Metacognitive processes were also triggered by reflecting the functioning of the AT and the own translation decisions. We can even find authentic professionalism because

of the use of a tool (AT) that is normally not introduced in the classroom because of distrust, although it is used in professional environments. Furthermore, the revision process goes beyond the limits of pure translation teaching and considers a competence often required in today's jobs. Finally, the constructivist approach can be found in independent learning how to use the tool and experimenting with it, information mining, and comparing one's own translation with those of others. With regard to the learning channels, it is obvious that the visual, the verbal and the logical channel are involved and mixed with solitary and social methods.

Detailed observations on error recounting in students' translations can be found in Varela Salinas & Burbat (in press), but can be summarized as a confirmation of my aforementioned 2007 study: the largest number of errors is in the grammar category, followed by lexicon/terminology and spelling and equivalence, although to a much lesser degree. By comparison, DeepL commits far fewer errors but there is still a similarity in the frequency of grammatical and lexical errors.

Given that grammatical errors were the most frequent and, therefore, the most problematic, we focused on them to study their distribution by categories. To perform an in-depth analysis, we established a new subclassification: inflection, syntax, conjugation, passive voice, pronouns, determined/

undetermined articles, gender, punctuation, conjunctions, subject omission, time use, prepositions, subjunctive. After counting them, in the reviewed post-edited texts, the results confirmed that inflection and syntax are crucial for the mastery of the German language; it was in these grammatical aspects that most of the errors were found. It was also observed that PE makes no sense if the target language is not mastered; when improving the final translation into the native language, machine translation may have a significant impact on the quality and consistency of the translation. This was the case of the German Erasmus students. If knowledge of the target language is modest, the simple use of automatic translation not only makes no sense, but can also lead to a final disaster. In some cases, there was a tendency to "correct" the alleged errors, but in the end a worse version was achieved, especially when students were not confident in the use of the target language. At the end of the teaching unit, there were still too many errors in the post-edited texts but their average number had decreased. This can be partly explained by the fact that the text was shorter (it was used for testing) and also by the fact that it was the last of the series and, therefore, the students knew more about the strengths and weaknesses of DeepL and could more frequently anticipate when a correction or revision was

likely to be necessary, even if their command of the language was not sufficient to detect errors.

With this task, we practiced some skills mentioned by Pym (2013) like “learn to trust and mistrust data” and “learn to revise translation as texts”. Given that the handling of machine translation and post-editing were individual tasks, skills of autonomous and individual learning strategies were reinforced. This was partly achieved by having the students reflect on how different ways of pasting text into DeepL, such as with and without line breaks, with and without formatting affects the “understanding” of the machine translation engine. The students also had to learn to justify their translation decisions and solve translation difficulties DeepL had been unable to handle. Certain errors in the proposed translations were obvious, such as when words were kept in the source language, and when the use of a word was clearly incorrect for reasons of polysemy or being a false friend. Thus it became important to use reliable sources, such as parallel texts, to decide on the correct term or expression. In summary, we can say that the training focused language/translation competence, information mining competence, technological competence besides professional skills like proofreading, quality assurance, and learner autonomy as well as team working.

Table 1. Overview of the pedagogical features related to the use of MT and PE in translation

Sub-competences according to EMT (2017)	Soft skills	CAT tools and task	Teaching strategy	Learning theory	Learning style /channel	Assessment type, tool and criteria	Average improvement in assessment	Learning outcome
Check, review and revise their own work	Strategic, autonomous and	DeepL	Teacher-directed,	Problem-based	Individual learning	Formative assessment, self-assessment	Low with regard to the quality of post-edited target text	Knowledge about error tendencies of
Apply post-editing to MT output	continuous learning	Post-editing of journalistic news related to basic economic concepts,	learner-directed, computer-assisted	Trial and error	Visual, verbal, logical		Medium with regard to the sub-competences related to managing the basics of MT and the PE process	DeepL, and therefore better anticipation and compensation during post-editing
Recognize the importance of data ownership and data security issues	Decision-making and problem-solving	translated by MT (ES-DE, into the foreign language)		Cognitive Learning				
Adapt rapidly to new tools and IT resources	Critical reasoning	Peer review of the post-edited texts						
Make effective use of CAT tools	Team working							
Master the basics of MT and its impact on the translation process								
Assess the relevance of MT systems in a translation workflow								

2.2. Use of Corpus and Terminology Management Programs

2.2.1. Compiling a Corpus. At the beginning of the second training unit, we assumed that we did not have a translation memory with texts on the subject we were going to translate, which was ‘eye anatomy’, in order to prepare ourselves for one of the later topics that would be ‘glaucoma’. The objective of this unit was to introduce to use and management of corpora in terms of procedural knowledge. Besides, making decisions and critical thinking when determining the quality of sources was also an important objective.

One method that can be used to extract terms and to make a glossary is to look for texts in the source language and parallel texts in the target language and compare their use of terms. Another option would be to search for Spanish texts that have also been translated into German in order to compile a parallel corpus. However, in our case, this would require many hours of work without necessarily obtaining a usable result. After searching for a suitable software solution, we chose the corpus manager Sketch Engine (<https://www.sketchengine.co.uk>). This online platform allows us to work with both digitalized documents and links selected by the user, which is very useful if you know the location of texts on the internet that contain the terminology you are looking for.

The students learned to manage the program through the explanations in class as well as by watching tutorials at home. The most convenient way to create an *ad hoc* corpus for a translation project is through the use of the built-in WebBootCat tool and the seed words function, which allows you to set up to ten keywords to automatically search sources on the web for and thus create a semi-automatic corpus with a large number of sources in a relatively fast amount of time. After practicing this method, I informed the students that even so, it is advisable to review the sources that WebBootCat chooses and to eliminate in advance those that do not correspond with your criteria. To choose the most frequent terms in the field in which they translated, students had to compile a Spanish (peninsular) - German (standard) comparable bilingual corpus. They searched the web for texts with keywords in each language for the respective corpus. I suggested that they also include "glossary" as a keyword in order to take advantage of relevant specialized lists available online. In this case, and so as to obtain a comparable corpus, the criteria that were applied uniformly for the selection were texts published on the web with an average degree of specialization because the translation was mainly informative. Special emphasis was placed on the use of original texts from reliable and identifiable sources. Also, Sketch Engine's functionalities

automatically remove duplicate sources and allow you to choose the text volume. In addition, the list prior to corpus compilation allows individual consultation of the retrieved links in order to confirm their quality or eliminate those that do not meet the established criteria or are of a different linguistic variety from that required. In class we discussed whether the quality and reliability of the texts was adequate.

Nonetheless, in a second step I explained that this procedure would not be advisable for compiling an ad hoc corpus to extract terminology for a single assignment as it is extremely time-consuming. In practice, it would suffice to use the keywords/terms function, which successfully recognizes the main term candidates and, if necessary, manually deletes or adds terminology units. In addition, it is important that two lists are compiled: one of monoverbal terms and another of multiverbal terms. Once these lists are obtained, they can be downloaded in TBX or CSV formats or transferred to a text editor file and, once the noise caused by codes and characters has been eliminated, a clean alphabetical list of the most frequent terms can be obtained.

The teaching strategies put into practice were like in the first unit computer assisted learning by the use of a corpus management program, first teacher-directed, then learner-directed when they watched independently the tutorials and began to

figure out how the program works.

The learning theories taken into account were likewise experiential learning, trial and error, metacognitive learning. Especially in this unit the trial and error method was supported when using a “flipped classroom” strategy, since after a general introduction in class, the students had to complete the learning process at home by means of tutorials. As for the learning channels, the visual, verbal and logical learning types are involved together with a solitary learning method.

As for the skills we trained, the most important ones are information mining competence, technological competence, and learner autonomy. In addition, quality assurance was trained by laying the foundations for a quality translation job.

Table 2. Overview of the pedagogical features related to the use of a corpus manager for translation use

Sub-competences according to EMT (2017)	Soft skills	CAT tools and task	Teaching strategy	Learning theory	Learning style / channel	Assessment type, tool and criteria	Average improvement in assessment	Learning outcome
Use and adapt to new tools and IT resources Make effective use of search engines and corpus-based tools Apply other tools in support of language and translation technology	Decision-making Critical thinking	Text analysis tool Sketch Engine Retrieval of digitalized texts of the same type (instructional, but informational) in Spanish and German in order to compile a bilingual, comparable corpus. Test the main features of the tool, following the online guides.	Teacher-directed, learner-directed, computer-assisted	Problem-based learning Trial and error Cognitive learning	Individual learning Visual, verbal, logical	Formative assessment, self-assessment	High with regard to the prompt handling of the tool after watching the video tutorials. Medium with regard to the research competence (although no longer listed by the EMT as independent partial competence, it is included within the framework of technological competence). Critical thinking still often missing so selected sources are not always reliable or suitable.	Students strengthened critical thinking and research competence. They learned not only to compile corpora but also to carry out text analysis and text mining using the features of the program. The linguistic analysis helped to discover collocations and other aspects helpful for translation.

2.2.2. Terminology Management: Creating a Database. There is no doubt about the importance that a good understanding and certain mastery of terminology of a specific field has for a translator when carrying out a professional assignment related to a specific field of knowledge. Apart of introducing to the use, creation and management of terminology databases in terms of procedural knowledge, the objective of the present unit was to improve terminological and information mining competence, thematic competence, and technological competence. In addition, the softskill “cloudworking” was trained, since the database used is a cloud platform.

In order to organize the terminology units extracted from the compiled corpora in the previous unit and be able to retrieve them from the final list suggested by Sketch Engine terminological candidates in an orderly way, it is convenient to feed a database with these terms and organize them as terminology sheets.

There are several well-known terminology management systems, such as SDL Multiterm, or other terminology database solutions like those from TermStar or MemoQ. As we were looking for a non-commercial and accessible online option, I proposed termbases.eu. This platform had the advantages of being free for up to three databases and 3,000 terms, in addition to being in the cloud and allowing access to people authorized by the database creator. However, it has some

limitations: for example, there is no possibility to mark terms that appear within the definition or the context to take the user to the corresponding entry. The students had to start from the Spanish word list and organize the terminological units in alphabetical order and lemmatize them. They also had to do the same with the German terminology units. Then, they had to think about organizing them in such a way that they could be easily retrieved, including all the information that was of interest, such as definitions, context, equivalence, interesting grammatical aspects (category, declensions, etc.), context in the target language, and any other relevant data.

Again we use the same combination of teaching strategies (teacher-directed, learner-directed and computer assisted), a similar application of learning theories (problem-based learning, trial and error, cognitivism) and the same consideration of learning styles/channels (individual learning: visual, verbal, and logical channel) as in the preceding unit.

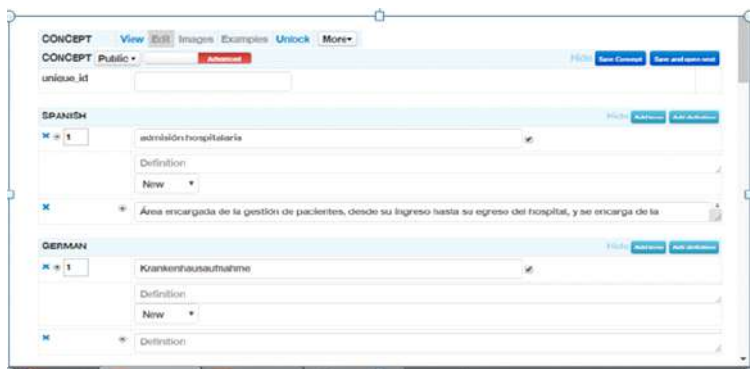


Figure 1. Screenshot of a terminology card draft

Table 3. Overview of the pedagogical features related to the use of a terminological database for translation use

Sub-competences according to EMT (2017)	Soft skills	CAT tools and task	Teaching strategy	Learning theory	Learning style / channel	Assessment type, tool and criteria	Average improvement in assessment	Learning outcome
Use relevant IT applications and adapt rapidly to new tools and IT resources Make effective use of CAT tools Apply other tools in support of language and translation technology	Decision-making Problem solving	termbases.eu Build a terminological database following guidelines	Teacher-directed, learner-directed, computer-assisted	Problem-based learning Trial and error Cognitive Learning	Individual learning Visual, verbal, logical	Formative assessment, self-assessment	Low with regard to terminology management and completeness of the information required for the terminology card.	Students learnt to follow instructions from a video tutorial and improved autonomous learning. Students built a basic glossary for a specific area.

2.3. Translating With a Translation Memory System (TM)

For some time now, it has been possible to store datasets in large quantities and integrate them into a translation workflow. In addition, there are translation suites like Trados Studio or MemoQ, with interfaces that make it easy to integrate electronic dictionaries into the translator's work environment.

Several authors have conducted studies on TM that emphasize productivity (words/hour or words/day). This is an important factor to consider but matters less in training students with a low language level because time pressure is considered an additional error factor. The only expectation should be that students meet the deadlines set by the trainer.

The goal for the third training unit was to improve the use of TM. The students had already had an introduction to some TM systems, but during their first year of studies when they were not translating. For this reason, they could not remember many of the ideas about the working process with TM. Nevertheless, they had basic knowledge of this type of CAT tool. Furthermore, I wanted them to identify differences between the results of an automatic translation and a computer aided translation as well as to improve technological competence, translation project management and teamworking ability, besides strengthening the skills of

the preceding units.

The five Spanish texts to be translated each related to the health sector, dealt with the disease glaucoma, and had a length of 110 to 571 words. The students had 45 to 90 minutes to translate each text into German. Regarding the text type, they were informational texts for patients and their families. This meant that the real difficulty was to change the terminology that Spanish patients would understand because of their Latin origin into terms of German origin that the average patient of the target culture would understand.

As in the case of other CAT tools, I looked for a non-commercial program that students could access from home, and that is why I eventually chose Wordfast Anywhere (<https://www.freetm.com/>). Nevertheless, we must emphasize that like with automatic online translators, online TM can raise serious security and data ownership issues. After remembering the basic elements of a translation memory and its usage as well as practicing from home the use of Wordfast with the help of tutorials, we first matched the texts on eye anatomy and their translations that we had previously corrected in class using the CAT tools (Sketch Engine and termbase.eu).

When assessing the translation, I did not only evaluate the products (target texts) but also how students enlarged

the glossary and searched for the standard German term, accepted terms and corrected them etc. The way they took the different steps from creating a TM up to the final step of exporting the file with the translated document was also assessed. Therefore, we commented in class on the changes made to the proposed segments or translation units. Sometimes, they even delivered a translation in groups after working from home.

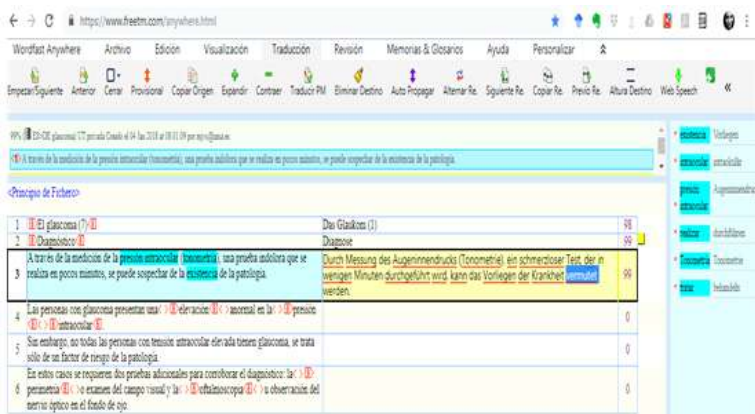


Figure 2. Example screenshot of a translation with Wordfast Anywhere.

Referring the methods of instruction, the teaching strategies, besides from computer assisted learning by the use of a TM were again teacher directed at the beginning, but then learner-directed and computer assisted too. The same different learning theories we considered in the previous units

can be applied here, but we have to add collaborative learning, as some of the translations were organized as group tasks, simulating projects within a translation company. We also find authentic professionalism because of the use of a TM, still rarely used in the classroom and normally pushed into the background, since it is considered to be part of a specific technological subject of the syllabus. At last, we reinforce autonomous learning with a flipped classroom approach, when students have to learn more about the use of the TM and experiment with it at home. As for the learning channels and methods, all of them are taken into account.

With this task, we practice to use and adapt to new tools as well as check, review and revise translations, to learn in an autonomous and continuous way, and to make decisions and solve problems justifying their opinion when working in a team.

Table 4. Overview of the pedagogical features related to the use of a translation memory

Sub-competences according to EMT (2017)	Soft skills	CAT tools and task	Teaching strategy	Learning theory	Learning style / channel	Assessment type, tool and criteria	Average improvement in assessment	Learning outcome
Check, review and revise their own work Recognize the importance of data ownership and privacy issues Adapt rapidly to new tools and resources Make effective use of CAT tools	Strategic, autonomous and continuous learning Decision-making and problem-solving Critical reasoning Teamwork	Wordfast Anywhere Post-editing of informational texts/brochures related to glaucoma, translated with TM (ES-DE, into the foreign language)	Teacher-directed, learner-directed, computer-assisted	Problem-based learning Trial and error Cognitive learning Collaborative learning	Individual learning Collaborative learning Visual, verbal, logical	Formative assessment P2P assessment	The grades improved an average of 1 point (grade scale from 0 to 10), mostly among the weakest students, as they learned to combine the practical knowledge of how to use the translation memory, the content of the glossary and the linguistic and thematic knowledge conferred on them by having previously worked on several translations in the same subject area and aligned them. None of the students failed the final exam.	The students learnt to use Wordfast Anywhere. In fact, some of them continued to use the TM for new assignments when it was not required anymore. Critical reasoning and justification of decisions improved by P2P assessment. Motivation and self-esteem among the weaker students grew.

3. Critical View: Achievements and Limitations of Technology

It can be seen that as students' translation process management improves, so do their skills and output. In addition, their grades improve. However, can the use of CAT tools compensate for poor linguistic knowledge? The observation during the classroom experiences reflected in the tables shows that it only compensates to a certain extent: the post-edited translations into the mother tongue by the Erasmus students proved to be quite good; furthermore, at a final stage, the error rate dropped among all students, though not enough to ensure quality translations, except for a few cases of outstanding students. In other words, only those who master a certain level of source and target language will be able to take advantage of MT and produce a satisfactory or even good post-edited translation. In terms of translation competence, post-editing has the advantage of explicitly bringing together two types of practice: the linguistic and the instrumental (technological). There is an obligation to analyze the language output and to justify every accepted or post-edited sentence. Moreover, just as Belam (2003) states, PE is a good way for students to get to know the pros and cons of an MT system as well as to become aware of their own limitations, especially in terms of

language skills.

One disadvantage of CAT tools is the time it takes to learn how to configure them correctly. Likewise, the result they give us needs to be treated and refined. It is essential that the users of these tools know what they want and for what purpose. For instance, depending on the degree of specialization and inclusion of common language lexicon with specific meaning, the results may differ substantially.

As for translating with TM, it can be seen that the recycling of previously corrected translations is a way to improve the quality of translations into a foreign language in a better way than with PE. The following figure shows how the exams in 2017/2018, when working with TM was implemented, were much better than in previous courses. As the graded translations were part of the final exam that students completed, exact details cannot be provided on the errors. However, the overall chart shows that no student failed the exam even though the number of students examined was higher than in previous courses. This may be because the students had been able to combine the practical knowledge of how to use the translation memory, the content of the glossary and the linguistic and thematic knowledge conferred on them correctly by having worked on several texts in the same subject area with the translation memory bank in class during the semester. In addition,

DeepL or Sketch Engine have sometimes been used to confirm the meaning of a translation unit or to search for synonymous expressions. In the end, as the trainees observed their translation performance improve with the use of a CAT tool, this may have increased their motivation.

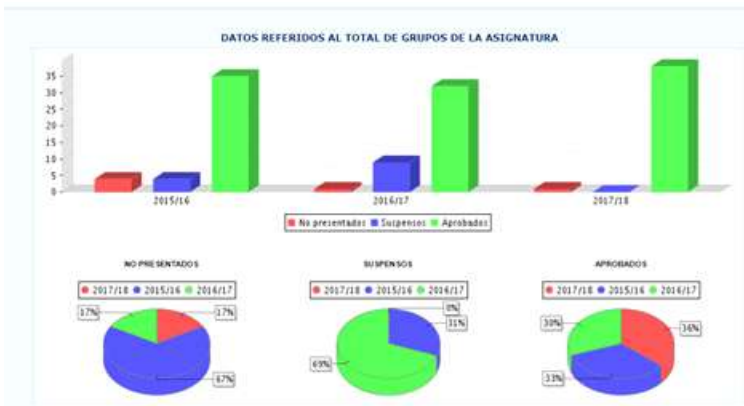


Figure 3. Overall results of the examination

(Title: Figures relating to all the subject groups, No presentado: Exam not taken, Suspensos: Failed, Aprobados: Passed)

However, the performance also depends on the linguistic register, the text genre and its difficulty. For example, paradoxically, translating medical texts from Spanish to German is, with regard to terminology, easier when it comes to an expert target audience. This indicates a mismatch if we consider the same text type and genre but for languages of different origins like Spanish and German. In this case,

working with parallel texts is not helpful enough. That is why a TM is advisable as it will suggest translation chunks that really correspond to the register we are looking for. At the same time, it is not a tool that requires the user to delegate responsibility; rather it is necessary to rethink one's translation decisions.

However, I agree with Piccioni and Pontrandolfo (2017, p. 96) on the irreplaceability of translator training considering all of the competences that EMT has listed, and on the need to use critical thinking and logical reasoning in assessing quality. In this context, formative assessment with direct feedback from the teacher in order to increase motivation as well as learning a realistic self-assessment in order to improve autonomous learning is critical.

Finally, we should not think only about the environments of developed countries (cf. Rodríguez de Céspedes, 2017, p. 118). Technology itself is not a successful solution *per se*. Among other things, students have different technological background knowledge and access to technological tools and resources. There are also sometimes technical breakdowns, which bring about a corresponding loss of time and effectiveness. Therefore, the use of technological tools has to be carefully considered according to the didactic goal and the learner group.

4. Conclusions and Prospective View

New technologies are already a part of the current translator's working environment and they are here to stay. That is why CAT tools should also be used in translator training. It is, however, essential that students learn about both their own limitations and those of such tools. It is about helping them to construct knowledge (declarative skills), acquire procedural/instrumental skills besides those that will help them manage everyday problems.

(S)ince we are dealing with skills rather than knowledge, the development of expertise requires repeated practice. For this reason alone, TM/MT should ideally be used in as much as possible of the student's translation work, not only in a special course on translation technologies (Pym, 2013, p. 90).

As far as is possible, we can try to simulate real-life situations of the translator's workplace by using authentic texts, letting students work in teams and having them use CAT tools. However, we must keep reality in mind as the assumed and necessary language and cultural knowledge is often lacking and it becomes sometimes more important than the use of CAT tools to strengthened it during translator training, even if it is not a (main) topic of the syllabus.

Translators should not fear the possibility of machines

leaving them unemployed: machine work still requires a lot of supervision and is not a threat, although it can be used to increase productivity and quality. Eventually, technology will be able to reach an adequate quality, but not to the point of replacing human translators. For instance, context is essential to a correct translation, but this is currently an element that an MT system is not able to interpret if it is not made explicit: computers are not able to think outside of the box. This means that as long as context-bound texts are produced, the human factor will be necessary.

Technology needs to be mastered first before it is used efficiently: it is the translator who has to be the driver of CAT tools, not the other way round. In conclusion, we call for greater integration of CAT tools into translator syllabuses as authors such as Corpas Pastor & Varela Salinas (2003), Pym (2013) and Kenny & Doherty (2014) have already stated, arguing that the curriculum should allow graduates to integrate into the labor market and enhance their employability.

In this context, it is clear that the improved quality of technology for the translator's workplace enables us to predict, with relative certainty, that the translator profession as we know it today is going to disappear in many specialized fields (cf. Svoboda, 2017, p. 101 ff.). It is currently undergoing profound changes, and the future professional profile of a translator might not simply be a person who masters the transfer of a text from one language to another, keeping

content, intention and cultural elements safe, but an expert in language capable of carrying out a large number of other tasks, such as post-editing, review, layout, rewriting and transcreation (Ramírez Pereda & Varela Salinas, 2017), in addition to others that are new, such as specialization in translation engine training, quality assurance in post-editing and computational linguistics.

Finally, proper use of technological tools is useful for improving translator-training quality, that is, enhancing translation pedagogy. The increasing importance of CAT tools for translators should lead us to rethink our teaching models and integrate them not only as an objective but also as a means in translator training. Rather than perceiving technology solely as an ensemble of tools by which learning content can be delivered and technical competences achieved, we should integrate the learning principles that underlie them into teaching practice. Finding out which of them suit our students and our didactic concept as well as being aware that they are not panaceas in themselves will help us use them to reinforce excellence and convert them into “teachnology”.

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