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Alignment of Translation Technology Training with Professional Practice in Mexico: A Glimpse into the Situation

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An exploratory study about the use of translation technologies in translation programs in Mexico reported that few professors teach technology in few translation courses. Some reasons for this were that they had not been well trained in their academic programs when they were students, or they lacked a more comprehensive knowledge of these technologies (Peña Aguilar 2018). Effective training was not possible for most of these instructors as students, and they seemed to be reproducing similar learning insufficiencies with future translators. Because of this, another survey-based project was devised to identify the use that professionals who graduated from Mexican translation programs are making of translation technologies. What could be their disposition towards the use of translation technologies? The results indicate that professional translators do not resort to the use of 'core' translation technologies very often, but do use other electronic resources useful for accomplishing their tasks. One in two translators thinks their income has increased due to their technology knowledge, and they learn about these technologies on their own. Additionally, they are partly enthusiastic and neutral about using translation tools of this type. Professional translators think they could have learned about translation environment tools (TEnTs) at university (and they wish they had), but university instructors are still not teaching these technologies as much. So, there is a need reported by a few professionals, but not being dealt by some university programs. This could tell about the need to change or revise translation programs or, at the very least, the need to have a change of attitude on the side of university instructors. In contrast, those that are doing their part would hopefully find some reasons to keep up.

Keywords: translation technologies; translation training; translation environment tools; computer-aided translation; CAT

1. Introduction

"It is widely acknowledged that the purpose of educating students is to meet the demand of society" (Erwen and Wenming 2013, 16), and this premise is regularly assumed to be true for any academic institution. However, it is also true that universities may lose sight of the main objectives sometimes, especially when there is no contact with real-world needs, and there is a

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lack of research studies that clarify the connection between changes in the field of translation and the necessary education changes required to meet them.

This study[1] is a response to this need to delve into reality a little more. The entire project includes two related studies. My motivation was, firstly, to explore the situation in Mexico regarding the use of translation technologies in universities, and secondly, how training (or lack of it) was affecting professional translators in their work. Thus, the first study was focused on the instruction of translation technology at university level and was directed to teachers from translation programs in Mexico. In this survey-based work, instructors reported that few of them were teaching technology in translation courses. Moreover, the technologies they focused on the least in classes were translation environment tools (TEnTs) and term banks. The most used, on the other hand, were search engines, online dictionaries, and bilingual concordancers—technologies that are also popular among language professionals, in general. Some of the reasons given for the lack of use of translation technologies were that these educators had not been well trained in their academic programs when they were students, or did not have a comprehensive knowledge of these technologies. Apparently, effective training was not available to most of them as students, and these instructors seemed to be reproducing similar learning insufficiencies with future translators (Peña Aguilar 2018).

Because of the findings in this early study, another project was conceived to identify the use of translation technologies by professionals who graduated from Mexican translation programs. The question I want to answer at this stage is: How has their educational background affected their disposition towards the use of translation technologies? In general, I want to identify the types of translation technologies they apply, and their frequency of use. I am also interested in learning whether or not clients request the use of a certain technology, what kind of tools translators wish they had learned about at school, and other information that will be described in the next sections. Most importantly, the ultimate goal of this work is to compare or contrast the information from professionals with what was reported by educators in translation training programs in Mexico. Is there any sign of alignment of professionals' translation education with their real-life experience? What can we learn from professional practice to inform training?

[1] The present work derives from Peña Aguilar (2019), which is a short report on the studies described here and was published in the proceedings of the Translating and the Computer Conference (TC41), organized by the International Association for Advancement in Language Technology (AsLing).

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2. Translation Technologies and Mexican Translators

The inspiration to direct attention to these themes came from the fact that there is a certain absence of literature on this matter in Mexico. After reviewing bibliographic databases and asking national colleagues about publications in this regard, I only confirmed the scarcity of research work dealing with these issues. This does not mean that there are zero studies which revolve around translation technology affairs; there are theses and monograph studies which involve the work of translators and professors from universities, but they are mostly concerned with specific questions that are studied individually. Likewise, the dissemination of outcomes is mainly through presentations and proceedings at regional or national conferences, in university texts, or small-scale publishing collections. Apparently, not many fellow Mexican translators are publishing internationally, and because of this there is an absence, in global journals or publications, of information in this respect.

In spite of the challenges, I was able to identify two research studies done in Mexico about the state of the field in this country. They are nationwide studies that focus on general aspects of the translation territory, and they add relevant data regarding translation technologies, which will be used for contrasting with the work that will be presented.

In chronological order, from the oldest to the newest, let us present the first study which was carried out in 2014. This research entitled "Encuesta nacional del perfil del traductor profesional en México" (National survey on the profile of professional translators in Mexico) was done by Luis Raúl Fernández Acosta; the main objective of his work was to learn about the profile of professional translators in Mexico in terms of academic background and professional performance. He was able to survey 477 translators working throughout the 32 states of the country and asked questions pertaining to aspects such as employment status, areas of specialization, and computer-aided translation (CAT) tools (use and preference). His outcomes revealed that only 20% of the participants had academic background in translation (either a bachelor's or a master's degree), that most (80%) work as freelancers, and most work falls within the legal field. Forty-one percent of the respondents used CAT tools (or TEnTs) like SDL Trados, memoQ, or Wordfast, with SDL Trados being the favorite among Mexican translators at that time (Fernández Acosta 2018). This seems to be the first assessment of the situation of translators' reality in Mexico, and the sample of participants was big enough to identify interesting trends in their answers.

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The second study was a widespread endeavor done by the Italia Morayta Foundation in 2017 titled "Estudio de encuesta sobre la traducción y la interpretación en México 2017" (2017 Survey study about translation and interpretation in Mexico). For this work they gathered answers from 1087 translators and interpreters from all across Mexico. So, compared to the research done in 2014, this study more than doubled the sample size. Due to this, the work done by this foundation is considered the most comprehensive research done on the field in my home country, Mexico. Similarly, it sought to gain knowledge about the nature of the work of the Mexican translator and their education background, if any. This study included not only translators and interpreters of foreign languages, but also those who work with sign and indigenous languages. This was very much appreciated by researchers, professionals, and educators alike, as there had never been a record of this type. Most general results (in the translation arena) are in accordance with the 2014 study, and can be summarized the following way: A little less than 20% of translators have university education in translation, 78% work independently or combine translation with a more permanent job at an agency or company. Thirty-seven percent of the respondents reported using CAT tools regularly for their work (Vaughn Holcomb 2017). This number is 3% lower than that of the first study, but we have to consider that this one included translators working with indigenous languages and these tools do not include such languages as options. Therefore, their participation may have had an effect on this final number. All in all, the two research studies' outcomes generally coincide; however, what remains to be determined is how similar or close in percentages the findings from the study being presented in the following pages are. It promises to be an interesting contrast.

3. The Effect of Translation Technology on Translators

We have to consider that translation technology and the impact that it has had on translators (or lack of it) have been assessed differently in various contexts. In Mexico, we are still exploring how much it is being used or accepted in the field, but in other parts of the world, the orientation of the research varies. By way of example, for the past seven years or so there has been an approach to studying translation technology started by Maeve Olohan (2011), which offers an interesting way to connect translation studies with the sociology of science. This method involves Andrew Pickering's (1995) notions about the interaction of human/nonhuman agents, but applied to translation practice. Olohan explored in particular the

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translation experience with translation memory (TM) software in light of this view. She reviewed forum posts about TM in an online technical support forum for translators and observed a dissimilar tuning of the human and nonhuman factor for two types of translators. In any case, the experience identified had to do with a certain disposition towards technology on the part of translators. Others have followed suit, like Minna Ruokonen and Kaisa Koskinen (2017), who directed their study towards translators' emotional experience with technology. To do that, translators wrote love/breakup letters to a tool, application, or aspect of work. This novel method helped to identify a tendency to assign agency to technology by more than half of the translators. Patrick Cadwell, Sharon O'Brien, and Carlos S. C. Teixeira (2018), for their part, focused on (non)adoption of machine translation (MT) among professional translators in two contexts (commercial and public sector). They wanted to describe the dialectics of resistance and accommodation, or 'tuning,' between the human and nonhuman aspects involved. Some of the outcomes indicated that a group of translators were more open to use MT, but that it had to do with a possibility for them to enjoy greater agency, as well.

Other trends in researching translation technology are moving toward (still controversial) themes like MT and/or artificial intelligence technology (Moorkens 2017; Massey and Ehrensberger-Dow 2017; Isabelle and Kuhn 2018; Isabelle, Cherry, and Foster 2017), but there are others focused on what is expected to become (and already is for some) the function of translators: post-editing (Gaspari, Almaghout, and Doherty 2015; Pym 2013; Rico 2017; Aranberri 2017). There is also great work being done in regards to how professionals in the field work or react to technology (Gough 2016; Marshman 2014), and to how educational programs should be adjusted to the market in language industry (Al-Batineh and Bilali 2017; Bowker and Marshman 2009) from places like Canada, England, and Arab countries. It is precisely this last thread of discussion into which this work intends to integrate its results, and hopefully add some insight as to how translation technology is experienced and seen in the Mexican context. But most importantly, it seeks to spark interest to do further research on translators' situations in Mexico.

4. Methodology

As noted before, this work intends to shed light on how training (or lack of it) on translation technologies has affected/influenced translators' professional lives. To that end, a

13-item questionnaire (see Appendix) was created. The emphasis of the instrument used to gather data is on the use of technology as reported by translators, and on background information that will provide variables for additional analysis of the results. The first two questions served as filters to participate in the survey. Number 1 was about consent for participation and publication, and number 2 about whether or not they had graduated from a translator training program offered by a university in Mexico. Needless to say, participants had to select positive answers to the first two questions to be able to continue. The rest of the information requested can be classified as follows: (i) participants' background: type of university training received and how many years have passed since they graduated; (ii) nature of work: kind of employment they had as translators (freelancer, agency translator, etc.), and name of the field(s) they focus their work mostly on (medicine, marketing, and so on); (iii) use of technology: kind and frequency of technologies employed for translation tasks, kind and frequency of technologies requested by clients for assignments, kind of tools/resources they wish they had learned more about at university, barriers to using certain technologies and ways to keep up to date on this regard; (iv) perceptions: type of effect on their income due to their technology knowledge, and opinions on how they see themselves in regard to translation technology (enthusiastic user, neutral user, etc.).

It is important to note that the term 'translation technologies' is used here to encompass two acronyms in the field: CAT (computer-aided translation) and TEnT (translation environment tool). The latter is part of the former, but for this study TEnT was used as a reference point, and other tools that may be considered a CAT tool, like the concordancer Linguee, are mentioned separately. Additionally, other tools employed by language professionals, like dictionaries, are also included in the term 'technologies.' In any case, an example of the type of tool is given so as to clarify all the tools to participants. The list of tools mentioned in the survey involves search engines, online dictionaries, bilingual concordancers, term banks, TEnTs, MT systems, and a blank space to give opportunity to add another option.

The survey was shared online, and participation was anonymous and requested through various channels: Facebook groups, electronic mails to program coordinators, and publications in proZ.com discussion forums. The sampling methods employed were convenience and snowball, as most potential participants were located in Mexico. In this case, there was a need to resort to other people for the recruitment of respondents, as former students of translation programs are not usually, or closely, tracked by university departments. As is known, once

students leave university, they stop using their institutional e-mail, but thanks to social media some of them are still in touch with former professors/departments. Because of this, directors or coordinators of translation programs were suitable conduits to connect with them. As for the other channels, they kindly self-selected once they identified they were eligible for participation.

Finally, the results obtained from this survey are going to be presented and compared with those of the author's first study which was related to teaching translation technologies in university programs, and with those large surveys carried out in Mexico in 2014 and 2017 that were previously described.

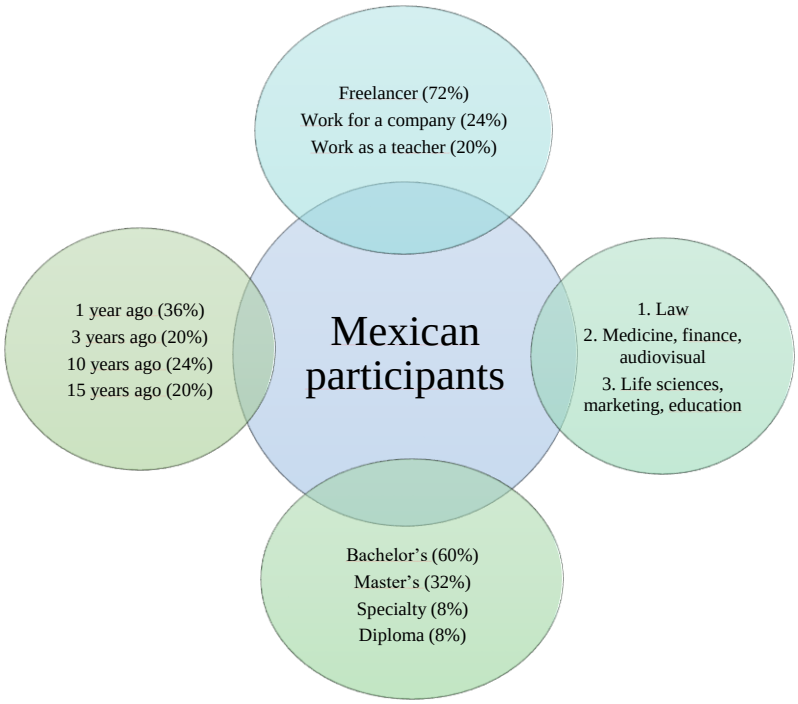
5. Results and Discussion

For this section, I will present the answers to the questions in a general manner, but when a variable can provide an interesting understanding of the topic at hand or other related studies can add to the discussion, the results will be shown differently or analyzed from the different perspectives. For that matter, the 2014 study done by Fernández Acosta (2018), "Encuesta nacional del perfil del traductor profesional en México," and the study conducted by Morayta Foundation (Vaughn Holcomb 2017), "Estudio de encuesta sobre la traducción e intepretación en México 2017," will be used to compare outcomes when possible. Subsequently, and taking into consideration the first study on teaching translation technologies (Peña Aguilar 2018) mentioned before, some cross-referenced ideas will be shared as well.

A total of 25 former students of Mexican translation programs participated in this survey. The size of the sample is not large enough to be able to generalize the results, but it may give an insight into the situation of professional translators in regards to the use of translation technologies in Mexico. It may be surprising to have such a small group of participants, but if we consider the proportion of university-trained participants in bigger-scale surveys, the amount is normally small. Fernández Acosta (2018) and Laura Vaughn Holcomb (2017) reported as little as 20% of participants with some academic background, undergraduate or graduate studies in translation. In this regard, more than half of the participants indicated they had a bachelor's degree in translation (60%), 32% hold a master's degree, and the rest had a diploma certification (8%) or specialty (8%) (figure 1, bottom circle), which is a graduate course in Mexico. Here, numbers exceed 100% due to double selections (or maybe triple?) by

some participants. Over half of them had also completed their studies recently, 56% had graduated within the previous 3 years. On the other side, 24% finished school 10 years ago, and the remaining 20% had graduated 15 years ago or more (figure 1, left circle).

Figure 1. Academic and background information of participants



In terms of the nature of their employment (figure 1, top circle), 72% worked as freelancers, 24% were working for a company, 20% worked as a teacher, 8% (2 people's extra responses) indicated that they were working as assistants, and one (4%) was working for a translation agency. In the graphic, just the first three top answers are represented. You may notice that the percentages exceed 100%, this implies that some translators (possibly the freelancers) do another job as well; working two jobs is common in our field. In Fernández Acosta (2018) and Vaughn Holcomb (2017), a large percentage of translators reported working as freelancers, 80% and 78%, respectively. These three sources then confirm the general trend in Mexico, but not only there. Similarly, other voices in the literature claim that this reliance to a great extent on the freelance model is a tendency in the translation industry (Moorkens 2017, 465).

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With reference to the field(s) they focus mostly on (figure 1, right circle), they reported legal as the field in which they frequently translate. In second place, medicine, finance, and audiovisual translation were equally chosen, whereas the third most selected fields were life sciences, marketing, and education. In the same manner, in Fernández Acosta (2018) and Vaughn Holcomb (2017), legal was also the most selected field, with medicine following in second place. The order of preference changes for the rest of the fields in both research studies, but the issue at stake is that the top two fields should be considered in some way in training courses inside and outside universities given their importance in the market. This is all very interesting, as in the first study about teaching technologies just 17% of professors were focusing on specialized fields for teaching, like medicine or law (Peña Aguilar 2018). This improvement opportunity for training programs in Mexico should be considered for future program enhancements.

In relation to the types of technologies and frequency of use, the reader can easily notice the trend in answers in table 1: Search engines, like Google, are very much used. Likewise, online dictionaries and bilingual concordancers are tools that are generally popular among language professionals. However, the frequency drops when it comes to term banks, TEnTs, and MT systems, which are considered 'core' translation technology or frequently employed technology in other contexts. Some interesting additional findings in this regard were that 75% of legal translators are frequent users of translation technologies, as are professionals who graduated 10 to 15 years or more ago (80%).

When comparing with Fernández Acosta's study (2018), we cannot see a great difference in responses related to frequency of use, as their investigation reported that 41% of Mexican translators used CAT tools, and SDL Trados (a TEnT, incidentally) was the most popular, whereas this study reported 36% of frequent users of TEnTs ('all the time' and 'regularly' options). Vaughn Holcomb (2017), correspondingly, informed that 37% of surveyed translators used CAT tools regularly. Notwithstanding the difference in the size of samples, answers in all these studies are still in agreement.

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Table 1. Frequency of use of translation technologies

	ALL THE TIME (1)	REGULARLY (2)	SOMETIMES (3)	NEVER (4)	TOTAL
Search engines (e.g. Google, ask.com)	56.00% 14	24.00% 6	20.00% 5	0.00% 0	25
On-line dictionaries (monolingual-bilingual, e.g. Wordreference or Cambridge)	68.00% 17	32.00% 8	0.00% 0	0.00% 0	25
Bilingual concordancers (e.g. Linguee or TradooIT)	48.00% 12	28.00% 7	20.00% 5	4.00% 1	25
Term banks (e.g. IATE or TERMIUM Plus)	12.00% 3	28.00% 7	32.00% 8	28.00% 7	25
Translation environment tools (e.g. LogiTerm or SDL Trados)	24.00% 6	12.00% 3	40.00% 10	24.00% 6	25
Machine translation systems (Google Translate or DeepL)	8.00% 2	16.00% 4	48.00% 12	28.00% 7	25

Finally, when contrasting educators' answers (from the first study by Peña Aguilar in 2018) with the present work, professionals (36%) reported using TEnTs more than the frequency in which they are taught by instructors. In the previous investigation, 20% of instructors said they taught TEnTs 'all of the time' and 'regularly' in translation courses, 44% 'sometimes,' and 46% 'never.' According to the samples, there is a mismatch in the frequency with which this technology is taught and used in real life by professionals, as their frequency of use is higher.

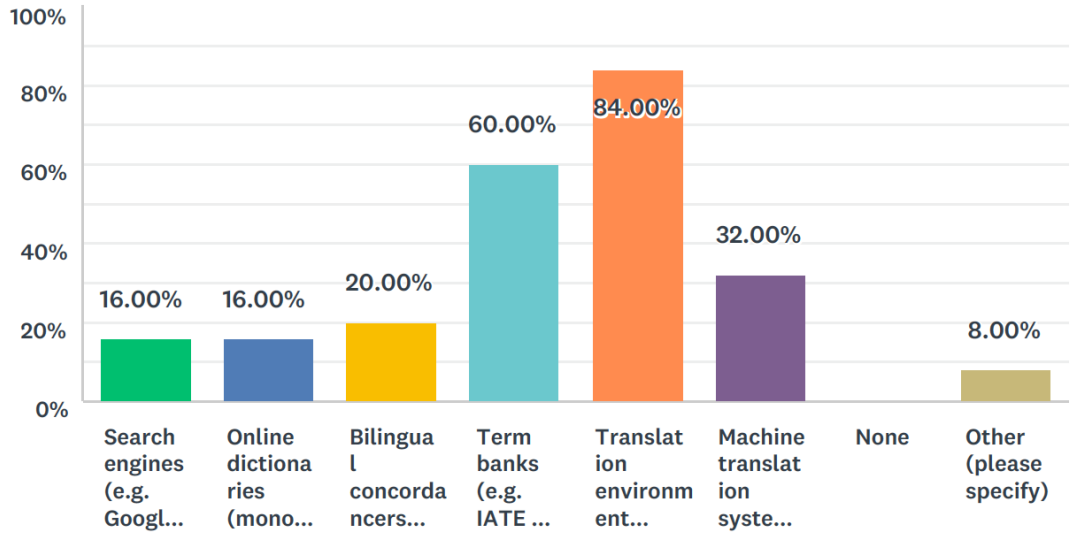
Table 2. Frequency of clients' requests to use technology

	ALL THE TIME (1)	REGULARLY (2)	SOMETIMES (3)	NEVER (4)	TOTAL
Search engines (e.g. Google, Ask.com)	4.17% 1	4.17% 1	20.83% 5	70.83% 17	24
On-line dictionaries (monolingual-bilingual, e.g. Wordreference or Cambridge)	0.00% 0	12.50% 3	20.83% 5	66.67% 16	24
Bilingual concordancers (e.g. Linguee or TradooIT)	0.00% 0	4.17% 1	25.00% 6	70.83% 17	24
Term banks (e.g. IATE or TERMIUM Plus)	0.00% 0	8.33% 2	25.00% 6	66.67% 16	24
Translation environment tools (e.g. LogiTerm or SDL Trados)	8.00% 2	16.00% 4	28.00% 7	48.00% 12	25
Machine translation systems (e.g. Google Translate or DeepL)	0.00% 0	8.33% 2	25.00% 6	66.67% 16	24

Concerning the requests on the part of clients to use certain technologies for translation assignments, the findings show that there are no frequent petitions of this type for the respondents. Still, there are indications that clients are making requests for the use of various

types of technologies. However, the ones that could be considered essential translation tools (TEnTs, term banks, even concordancers) are not often required to be used for translation tasks. In general, two thirds (66%) mentioned term banks, and concordancers are never requested to be used, and almost half (48%) of participants said they had never been asked to use TEnTs. Interestingly, by filtering answers we could identify that freelancers and recent graduates were the ones reporting more of this type of demand from their clients. This information tells us that clients are somewhat aware of this choice they have (to make such requests). As has been discussed in the literature, it is not only language professionals who may increase their income by using TEnTs in their work; employers and clients may benefit from this too, as the costs may be reduced (Marshman 2014, 381). In any case, training programs in universities should be paying attention to this reality and be more responsive to market needs so as to help students be comfortable using multiple tools (Bowker 2015, 93). Fernández Acosta (2018) and Vaughn Holcomb (2017) did not ask for information in this regard, so this is an issue that needs to be investigated further.

Figure 2. Tools/resources translators wish they had learned more about at university



In order to identify some of the needs professionals think they currently have in regards to technology, a question about those tools they wish they had learned about at university was asked. They could select more than one from the list of options given. The overwhelmingly most selected choice was TEnTs, followed by term banks and then MT. Their answers correspond to the same tools that were selected as having less frequency of use (TEnTs, term

banks, and MT). There may be a high correlation between lack of use and unfamiliarity with such tools. Had they learned them at university, maybe they would be more inclined to use these types of technology. By filtering participants' answers we could determine that the ones who mostly selected this choice were those that also reported using TEnTs more and those that had graduated from college 10 to 15 years ago or more. This may indicate that they use this technology but do not feel informed enough. And also, we can understand why older professionals wish they had learned more about these tools, as these probably were not widely taught at university programs when they were students. On this subject, however, we have to note that in the first study conducted on teaching translation technologies only 20% of instructors at university level said that they were teaching TEnTs regularly in classes. Thus, this percentage, although restricted to the sample obtained for that study, may illustrate that there is still some absence of technology in university training courses, while at the same time there are professionals yearning for courses in which universities tackled this issue.

Another question asked to translators was about the barriers that prevented them from using translation technologies. They were given several options: (1) it is too expensive; (2) hardware/software mismatch; (3) availability for my language combination; (4) no time to learn; (5) too difficult to install/use; (6) not appropriate for my field of work; (7) there are too many tools (I can't install/learn/use them all); (8) other (they could add an option here). In the first study (Peña Aguilar 2018), one of the instructors brought up the fact that they did not have licenses for using these technologies, which is why the fact that their prices can be prohibitive was included in the discussion. In this research, two-thirds (68%) of professionals selected choice number 1, "it is too expensive," with answers 5 and 6 tied for second most frequent response. In third place was number 4. In option 8, two participants provided additional information. One of them said that there were no barriers at all, and the other one said that Trados and MemSource were considered "barriers" in his/her case. This was interesting, as it seemed like the tool itself was preventing him/her from learning more about it, denoting a lack of agency on part of the translator. Also noteworthy is that most novice professionals (85%), translators who had graduated 1 to 3 years ago, reported that the price is what restrains them from using certain technology. This makes sense, as they may not have started to earn enough money to save for updates or purchase technology licenses. Conversely, we have to remember that there are free software and tools that can be downloaded or can be used in the cloud. Apparently, most of the participants are not considering these options. In the study by

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Fernández Acosta (2018), only 7% of professionals reported using free CAT tool or cloud-based ones. This percentage indicates a low preference for free tools, but it could be related to the lack of knowledge about them. Further and more recent studies in Mexico should be done to identify how much this knowledge about free tools has changed.

There is literature that conveys the idea that translation technology will only make translators more competitive in the market (Erwen and Wenming 2013, 16) and that it will help translators to have a successful professional career (Gaspari, Almaghout, and Doherty 2015, 334). So, this should 'translate' into higher income, in theory. In this study, and according to participants' perceptions, having a certain knowledge about translation technology tools has made their income go up for 44% of them, whereas 32% believe it has not changed at all; for 8% their income is perceived to have gone down, while 24% cannot tell about changes in their pay. Considering that not many professionals reported a frequent use of core translation technology tools, having 44% reporting a higher income is good news. For those who believe their income has gone down, there is literature that supports their perception and gives some ideas as to why this could happen. In this respect, Elizabeth Marshman found that "time savings in translating are at least partially countered by investments in time and money" (2014, 382), which means that before the translator starts being productive with a certain TEnT, he has first to dedicate some time to learn it and, of course, expend resources to obtain such a tool, which may create a feeling of little income when starting to use it.

In the last sections of the survey, I asked about how translators keep updated about translation technologies after they leave college. In regards to the top three answers: the most popular option was "learn by myself," chosen by about three-quarters (74%) of the participants, but another favorite way to keep updated was "ask for help from a colleague or friend" (44%), whereas 20% said that they do not have time for extra training. Filters in answers allowed us to identify that those who regularly use TEnTs in their work commonly selected "learn by myself" (89%), and included the third choice "training courses offered by a translators' association" (22%). Another interesting data obtained was that those who had graduated 10 to 15 years ago or more were considering courses offered by translators' associations as a second choice. The reason why more experienced translators turn to associations for completing their training, as the author has noted, is due to their involvement with these professional organizations over time. Drawing younger or new translators more into courses and memberships seems to be an opportunity area for associations in Mexico.

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Both studies on translation technologies teaching and on the use of technology by professional translators end with a question about how enthusiastic respondents think they are concerning the use/teaching of translation technologies. For this current investigation there was a balanced selection between "I am an enthusiastic user" (48%) and "I am a neutral user" (48%), and a small number of translators opted for "I use it only when I am required to" (16%). There were no selections for "I avoid using it at all costs." Once again, percentages exceed 100% as some participants selected two choices instead of just one. In the case of instructors who participated in the first study, 70% of them identified themselves as enthusiastic about the use of language technology in translation courses, and 30% said that they were not, at all, but after reviewing comments they shared about their choices, it was seen that they, in general, had more negative things to say than positive. Because of this, I believe that there are contradictory feelings about the use of technology, and probably most of them said they were interested because they felt it was the right thing to say or were ambivalent on the advantages and challenges they have identified/experienced. In any case, having real enthusiastic professors in universities would only add great possibilities for adoption of more translation technologies in programs, so if instructors' answers are true, this could be good as well. When comparing this with the responses of professional translators, it seems like the latter were more cautious about what they reported, as almost half of them selected "neutral," and a similar number said "enthusiastic."

"It is worth recalling that computer-assisted translation (CAT) systems have been supporting translators in their work for well over two decades" (Massey and Ehrensberger-Dow 2017, 304), and they are only getting better every year. There is no doubt that translators need to keep up so that they do not get stuck with traditional methods for translating. Universities are only one means to learn about these technologies, but for those who are willing to dedicate themselves professionally to translation, this is the primary way to be trained on the technology tools they will eventually be required to employ. Some voices say that not all students who come to university are computer proficient, as their skills focus more on using technology for communicative purposes (Kornacki 2018), and I would concur with this idea. Therefore, we should not take for granted that they are computer savvy, and they, of course, should not either. They need to be trained on these technologies while they are at university.

Similarly, more and more scholars support the idea of aligning university training with market needs (Plaza-Lara 2016; Gabr 2007; Olohan 2007), as the latter sets the standard and

the pace in the field, and it may provide input for the improvement of any training curriculum or syllabus. However, there are still gaps that need to be taken care of first in order to bridge the gap between academia and the market, like well-trained staff and resources (Al-Batineh and Bilali 2017). Once these needs are tackled, then real attention can be given to this issue. I can tell from experience that the gaps mentioned by Mohammed Al-Batineh and Loubna Bilali (2017) are the same in the Mexican context, but further research needs to be done to learn more about the circumstances university translation programs are facing there.

Professional translators are left alone to face clients and technology once they leave universities. Most certainly have to rely on their own willingness to learn and on their own pocket to furnish these tools. What universities can do is to assist with technology guidance to ease the way to independence and success.

6. Conclusions

It is clear that Mexican translators, researchers, professors, and organizations need to do further research on these affairs and also to publish findings internationally to be able to participate in the worldwide discussion today. Otherwise, it can be challenging to obtain relevant data from previous studies done in Mexico.

All in all, the two large-scale studies identified reported similar outcomes to this research study in which participation was not as sizable as theirs. In regards to profile, they all agree that the Mexican translators mostly work as freelancers and work mostly in the legal and medicine-pharmacy fields. On the subject of use of technologies, professional translators do not resort to the use of 'core' translation technologies very often, but do use other electronic resources useful for accomplishing their tasks. For this particular investigation, translators reported their wish to have learned more about TEnTs in university and reported that some clients are requesting the use of such tools. One in two translators thinks their income has increased due to their technology knowledge, and they learn about these technologies on their own. They are partly enthusiastic and neutral about using translation tools of this type, but consider them to be expensive, and this hinders regular use.

How useful is translation technology training in Mexico taking into consideration these research findings? Apparently not very much. Professional translators think they could have learned about TEnTs at university (and they wish they had), but university instructors are still

not teaching these technologies as much. So, there is a need reported by a few professionals, but not being dealt by some university programs. Additionally, there is a mismatch in needs in terms of specialized fields, as professionals mostly work in legal and medical fields, but educators reported teaching just a little of specialized fields at university. Translators seem to be unaware of free software or cloud-based technologies for translating, and this is a theme universities should also be teaching to their students so that they do not have to rely on expensive tools. Therefore, in this case, Mexican university programs that participated in this study (through their instructors) may benefit from seeing the opportunity to enhance their programs by studying more closely the needs reported by translators and by aiming for a more aligned market–education situation.

In spite of the similarity of some results to the ones obtained in larger-scale studies, an important limitation of the research conducted was that the population for this study was small, and the knowledge obtained might not be conclusive. Especially in the aspects related to technology use and perceptions, there were not available studies to be able to compare this one with. This is why little prior research on this topic (or limited access to existing literature in Mexico, in general) was the main limitation. Lastly, a lacking aspect in this study was clients' information in terms of regional, national, or international base. This could have been an opportunity to recognize some of their needs or demands of translation technology use in terms of the work clients carry out. Hopefully, these issues will be addressed in future studies to provide a more precise picture of the situation there.

This was a small-scale study which explored the use of translation technology in Mexico, and this work suggests that to better inform their students, university administrators and academics need to know what clients and the industry, in general, are requesting from professionals. They need to learn about this type of studies to make informed decisions when revising translation programs, or to congratulate themselves for making efforts in the right direction.

Appendix

Questionnaire for professional translators

1. Question about consent for participation and publication.

2. Did you graduate from a translator training program offered by a university in Mexico?

_____Yes
_____No

3. What type of work do you have as a translator/interpreter? Select all that apply.

_____Freelancer
_____Work for a company
_____Work as a teacher
_____Work for an agency
_____Other (please specify)_____

4. In what field(s) do you usually work? Select the ones that apply.

_____Life sciences (biotechnology, biochemistry, among others)
_____Medicine/Health
_____Finance (banking, accounting, insurance, etc.)
_____Legal (commercial law, family law, among others)
_____Energy and environment
_____Marketing
_____Government
_____Education
_____Audiovisual (subtitling, dubbing, localization)
_____Engineering
_____Technology/science
_____Other (please specify)_____

5. What kind of university training in translation did you receive? Select the one(s) that best describe(s) your profile.

_____Bachelor's degree
_____Diploma program
_____Specialty (graduate one year program)
_____Master's degree
_____Doctoral degree
_____Post-doctoral degree

6. When did you graduate from your last translation program?

_____Less than 1 year ago
_____Less than 3 years ago
_____Less than 5 years ago
_____Less than 10 years ago

_____Less than 15 years ago
_____15 years or more ago

7. What kinds of technologies do you use for translation assignments? How often do you use them?

	All the time	Regularly	Sometimes	Never
Search Engines (e.g., Google, Ask.com)	_____	_____	_____	_____
Online dictionaries (monolingual-bilingual, e.g., Wordreference or Cambridge)	_____	_____	_____	_____
Bilingual concordancers (e.g., Linguee or TradooIT)	_____	_____	_____	_____
Term banks (e.g., IATE or TERMIUM Plus)	_____	_____	_____	_____
Translation environment tools (e.g., LogiTerm or SDL Trados)	_____	_____	_____	_____
Machine translation systems (e.g., Google Translate or DeepL)	_____	_____	_____	_____
Other (please specify name and frequency)	_____			

8. Do clients request work with any type of technology? How often do they make such requests? Select all that apply.

	All the time	Regularly	Sometimes	Never
Search Engines (e.g., Google, Ask.com)	_____	_____	_____	_____
Online dictionaries (monolingual-bilingual, e.g., Wordreference or Cambridge)	_____	_____	_____	_____
Bilingual concordancers (e.g., Linguee or TradooIT)	_____	_____	_____	_____
Term banks (e.g., IATE or TERMIUM Plus)	_____	_____	_____	_____
Translation environment tools (e.g., LogiTerm or SDL Trados)	_____	_____	_____	_____
Machine translation systems (e.g., Google Translate or DeepL)	_____	_____	_____	_____
Other (please specify name and frequency)	_____			

9. What kind(s) of tool(s) and/or resource(s) do you wish you had learned more about at university? Select all that apply.

_____Search engines (e.g., Google, Ask.com)
_____Online dictionaries (monolingual-bilingual, e.g., Wordreference or Cambridge)
_____Bilingual concordancers (e.g., Linguee or TradooIT)
_____Term banks (e.g., IATE or TERMIUM Plus)
_____Translation environment tools (e.g., LogiTerm or SDL Trados)
_____Machine translation systems (e.g., Google Translate or DeepL)
_____None
_____Other (please specify)_____

10. Are there any barriers for you to use certain technologies? Select all that apply.

_____It's too expensive
_____Hardware/software mismatch
_____Availability for my language combination
_____No time to learn
_____Too difficult to install/use
_____Not appropriate for my field of work
_____There are too many tools (e.g., I can't install/learn/use them all)
_____Other
Please share the name of the technology(ies) you had in mind for your answer to this question._____

11. Since your university education, how do you stay up to date regarding the use of technologies in translation?

_____Training courses offered by a translator's association
_____Training courses offered at work
_____I learn by myself
_____Ask for help to a colleague or friend
_____No time for extra-training
_____Other (please specify)_____

12. How has your knowledge about translation technology tools affected your income in the field?

_____My income has gone up a great deal
_____My income has gone up moderately
_____My income has remained stable
_____My income has gone down moderately
_____My income has gone down a great deal
_____I do not know

13. With regard to using translation technology, which of the following best describes you?

_____I am an enthusiastic user of translation technology
_____I am a neutral user of translation technology (e.g., I neither love nor hate it)

_____I use translation technology only when I am required to
_____I avoid using translation technology at all costs

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