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The Internet, Google Translate and Google Translator Toolkit - Nuisance or Necessity in Translator Training?

Abstract

The development of the *Internet* in the 1990s, the introduction of *Google Translate* machine translation in 2007, and the launch of *Google Translator Toolkit* in July 2009, have progressively changed the perspectives of teachers of translation and their students in terms of their expectations in relation to translation training, the translation process and its product. If, in the past, instruction in translation was to a large extent predicated upon teacher resourcefulness and the physical availability of parallel and similar texts, today it entails the introduction of freely available Internet resources, as well as training commensurate with their professional application and utilization.

This article presents the preliminary results of an ongoing study focusing on the modes and frequency of use of the *Internet*, *Google Translate* and *Google Translation Toolkit* among fairly advanced translation students, together with the findings of questionnaires that have been prepared in relation to the use of these resources by students in the translation of short texts. It concludes with the author's observations as to the applicability of these resources in translator training and the challenges thereof.

Introduction

With the advent of the Internet in the 1990s, and the commensurate rapid growth of information and communication technology, translation has taken a further step towards providing more informed and reliable products for the client. Translator education and training which, not long ago, were to a large extent predicated upon teacher resourcefulness and the (un)availability of parallel and similar texts, are today almost impossible without resort to information and communication technology, with freely available online web tools and services becoming an ever more significant element in contemporary classroom resources.

In addition to being a rich source of translation-relevant information and resources (web dictionaries, glossaries etc.), the Internet[1] and its search engines constitute readily accessible resources allowing translators to objectively assess the prevalence of occurrences of linguistic phenomena. As a "network of networks", the Internet may also be described as the most comprehensive corpus in the world. The system became publicly and commercially available in the 1980s and began to spread rapidly. It was estimated that Internet traffic doubled every year during the 1990s, and according to web sources[2], some 1.97 billion people were using the Internet by 2010; this figure appears destined to

increase yet further, particularly with the rapid introduction and expansion of ICT across the developing world.

Search engines, such as *Google* or *Yahoo*, are Internet applications designed to perform searches across the entire corpus of documents, images, and other resources available worldwide. According to net market share, *Google* was ranked first among the popular search engines in 2010 (with 84.65% of total), followed by *Yahoo* (6.69%) and the Chinese search engine *Baidu* (3.39%)[3]. With reportedly the world's largest index of web pages and over a million servers in data centres spanning the globe, *Google* processes over one billion search requests every day, searching billions of web pages in less than half a second.

In 2007, *Google* introduced *Google Translate* (*GT*)[4], a statistical machine translation (MT) platform that currently provides automated translations, directly or via a pivot language, between over 50 languages. Slovene was added to the list of Google-supported languages in September 2008. GT's success is to a large extent predicated on its statistical approach, which has proven to produce better results than the previously supported rule-based linguistic systems, most known among which is *Systran*, that for the most part retrieve data from bilingual dictionaries and grammars which are then supplemented by linguistic and other rules. Contemporary statistical MT systems rely on a large amount of human-engineered translations (UN, EU) which are utilised to automatically infer a statistical model of translation**.** The underlying premise is that for every source language element there are a number of possible translations, and the most adequate translation is assigned the highest probability by the system(Veritas: 2009).

The latest addition to Google's array of online-accessible tools, *Google Translator Toolkit (GTT)*[5], was introduced in June 2009. GTT is basically a collaborative web-based translation memory (TM) platform into which translators upload texts and submit them for translation. GTT solutions are drawn from a combination of previously human-engineered translations deriving from the global or individual TM, machine translations and source texts. As a rule, TM matches have priority over machine translated segments, and hits from an individual TM are preferred over translations from other TMs. According to two recent studies (Drugan and Babych: 2010, and Ramos: 2010) *GTT* is an advanced and innovative system offering both individual translators and agencies free and effortless access to machine translation. Its application has had encouraging results when used as the initial translation step as well as during the post-editing process, and has thus enabled a sustainable flow of work.

New technologies and online tools and services have also progressively made their way into contemporary translation classrooms. Yet simply using new technologies does not make teaching and learning either innovative or more effective (Kelly: 2005). Therefore new strategies of implementation and integration into classroom activities need to be elaborated, and these should be directly linked to attaining the desired translation competences.

To this end, a study was initiated by the Department of Translation Studies at the University of Maribor, Slovenia, focusing on the use of the *Internet, Google Translate* and *Google Translation Toolkit* by advanced English-Slovene translation students. This paper summarizes its preliminary findings based on the underlying assumption that if these resources are to be used efficiently by students of translation, teachers need to understand why and how students use them, as well as how they manipulate the results of automated translation to support their translation practice. In the context of the study, two questionnaires were prepared: the first one to explore the use of *GT* among students, and the second in relation to the guided and self-reflective translation of two shorter texts using *GTT*.A model translation class - incorporating the use of the Internet, *Google Translator Toolkit* and *Google Translate* in the translation of a selection of shorter texts - shall be prepared on the basis of the findings. This paper concludes with the author's observations and a discussion of the challenges in relation to the possible application of these resources in translator training.

Disciplinary Considerations

Translator Training: Approaches and Competences

Still very much characterized by learning-by-doing, contemporary translator training is, by definition, "associated with […] skills needed to produce an acceptable translation" (Pym: 2009) and should be complemented with translator education "which recognizes the need for students to acquire a wide range of interpersonal skills". Experience is of vital importance in the learning process of future translators but - as Pym puts it - students don't "simply absorb […] information; they have to be taught to locate and evaluate information for themselves."

Kelly (2005) further postulates contextualized translator training, primarily reflected through selection of authentic texts and materials (2005: p. 123), whereas Gile (1995) advocates a process-oriented approach indicating "translator training which is centred around *principles, methods* and *procedures,* rather than on the translation product" (1995: pp. 10-11). Gile is also convinced that such a process-oriented approach ultimately produces better outcomes than mere result-oriented translator training, especially in the initial stages of translator training, because it provides students the possibility of learning and implementing translation strategies faster than if they advance by trial and error. Other advantages he lists are that it is in line with reality – students face problems in the order in which they occur – and that by concentrating on the reasons for errors more time is devoted to the development of good translation strategies. Focusing on the process also permits teachers to be more flexible as regards linguistic acceptability and standards of fidelity.

Gile further believes that the process-oriented approach should be supplemented, especially in the later stages of translator training, with result-oriented fine-tuning, because the former "is not sufficient as the sole tool for raising students to a high level of professional translation expertise" (1995: p. 20). Gile writes, "Product-oriented guidance is necessary for fine-tuning, with instructors commenting on the trainee's choice of words

and structures as such, and making suggestions for the better formulation of target-language text. (1995: p. 11)

The contemporary transformational didactic model endorsed by Kiraly (2003) views translator training primarily as a learner-oriented activity. The teacher assumes roles such as "guide, assistant, mentor and facilitator" and creates a learning environment for pro-active students engaged in collaborative activities. "The individualized nature of the learning process is respected and, rather than distributing knowledge, the facilitator will guide learners in the construction of their own meaning." (2003: p. 23)

The notion of translator competence is closely associated with translation training. It has several components (indeed, such are designated "components of translation expertise" by Gile) and describe what professionals (or students holding a degree in translation) should know and be able to accomplish as competent translators. Munday (2009) reports that scholars made several attempts in the past to classify translator competence, but few have been empirically tested (2009: p. 64).

As the most comprehensive and all-encompassing categorization of translator competency, Kelly's (2005: pp. 32, 33, 73-78) summarized classification has been used for the purposes of this study:

- *Language competence*, i.e. communicative and textual competence in at least two languages, taking into account the 'real' level of language competence of students.
- *Cultural* (and intercultural) *competence* beyond geographical and other factual knowledge. Translators should acquire competence in perceptions, myths, beliefs, values, stereotypes shared by the members of their working culture.
- *Professional and instrumental competence* which encompasses the use of resources of all kinds, terminological research, information management, and the use of IT tools.
- *Interpersonal competence and networking*, ability to work with other professionals involved in the translation process, ability to work in teams.
- *Subject area competence* in different disciplines, allowing the translator to comprehend the source text, to know where to look for information.
- *Attitudinal competence* in relation to self-confidence and socialization as a professional translator.

The author anticipates that this study will help endorse these competences as well as contribute to improved translator training techniques.

Internet-assisted Translation

Translation, in the information age, relies heavily on the use of Internet resources and tools. As Samson (2005: p. 102) notes, teachers are no longer the sole source of knowledge to their students; today the problem is no longer one of too little information, but rather too much, and students need guidance in order to manage this situation. Such

should also be reflected in the methodological and practical aspects of translation training, in particular in terms of research and information management.

However, something needs to be addressed at the very outset: the extant situation causes more stress among teachers than among students who have never known a world without computers or the Internet. In addition to displaying a natural curiosity for information, the younger generation tend to have no reservations as to the application of new tools and resources. Such personal observations need to be corroborated by more research; however, the tendency for students to make use of resources and information available via the Internet is nevertheless clearly manifest.

Available almost anywhere, the Internet is the world's most comprehensive information resource. In addition to its provision of online mono-, bi- and multi-lingual dictionaries, glossaries, thesauruses and references, it is a rich source of authentic translation-relevant information and natural language data information; as such it is virtually inexhaustible, and forever freely available. Such facets also need to be exploited by teachers of translation - from the simplest spell-checks to searches which may determine correct target language terms and collocations.

If generalizing, we might claim that there are two major uses for the Internet in the translation process: as a provider of translation relevant tools and resources, as well as a source of subject matter, facts and/or linguistic information. Selcher (2005: p. 176) points out that quality Internet searches "beyond merely 'finding something' in a hit-or-miss way, is definitely more difficult and requires much more patience and constant updating of techniques than does traditional library research". He believes that information overload is very much a shortcoming of Internet use, and something which accordingly requires sharp management and judgment skills. Both teachers and students lack appropriate Internet research skills, but only teachers have the opportunity to guide students and enough knowledge of subject matter to encourage, specify and demand credible sources.

The value of on-line translation systems to the professional translator is much debated and disputed. Some studies (Drugan & Babych: 2010, citing Prior: 2010) report that professional translators are unconvinced, and claim that post-editing requires more time than translating from scratch; others (Zetzche: 2010a and Zetzche: 2010b) point out that we should nevertheless not forget about the usefulness of such tools:

"Since translation quality is very abstract and arguable […] the only relevant measure for translation is usefulness. For some kinds of texts, high stylistic standards are very important (think: literature, marketing); for others it's accuracy (think: legal, medical); and for still others the only thing that counts is the transfer of information (think: social networks, some technical documentation, customer support data). You may disagree with such classifications, but these are the lines that many large corporations are drawing when deciding what to give to translators and what to have machine translated. (Zetzche: 2010a)

The empirical study presented below shows that quality internet searching and effective implementation of web-accessible resources present an important and challenging feature of translator training.

The Study

The Setting

The study was carried out by the Department of Translation Studies at the University of Maribor as part of the Translation 2 tutorial during the winter semester of the 2010/2011 academic year. It was conducted with a group of 3rd year students of the BA Inter-lingual Studies (English) programme; this was the first generation to enrol in the Bologna-compliant programme offered by the Department since 2008. This was the students' second year of hands-on English-Slovene translation by which time students are expected to have acquired basic competencies and skills in English to Slovene and Slovene to English translation. Apart from that, their previous experience and knowledge included classes on English and Slovene linguistics (phonetics, word-formation, syntax etc.), literature and culture, as well as tutorials in oral and written communication, English language development (focusing on grammar), and introductions to the study of language as well as professional translation and interpretation. Some elements of English-Slovene stylistics have also been covered and during Translation 2 tutorial, focusing on newspaper style, headlines and official documents.

The didactic model applied in the Translation 1 and Translation 2 modules was a traditional one, supplemented by a process-based approach, combining lectures - or rather presentations - on selected subject matter, with out-of-class preparation of authentic texts and the group assessment of translations, whereby special emphasis was placed on the very process of translation.

Motive for the Study and Data Collection

The need for the study has arisen from author's own classroom experience. Students, particularly the more advanced, were increasingly using *Google Translate* to support their translation tutorial homework assignments. The consequences were starting to have an unnerving effect on classroom workflow; students were increasingly disinterested and unwilling to participate in class discussions because they could not reflect on the translation process or the translation solutions offered by either themselves or their colleagues. With a view of creating an interesting classroom setting which would not exclude but incorporate these resources in the didactic process, a questionnaire (*Questionnaire A*) was prepared in order to address the use of *Google Translate (GT)* by students.

Questionnaire A comprised a total of 11 questions: 9 multiple choice and 2 open ended. The questions were designed to be as clear, concise and as motivating as possible. Thematically, they addressed the use of *GT* in general, as well as in relation to different types of text, together with the students' own perceptions as to the reliability of such tools

together with their opinions as to their present and future roles. The aim was to make students aware of pitfalls associated with the use of *GT* and susceptible to areas that needed their special attention.

Encouraged by the results, we decided to introduce them to at that time novel *Google Translator Toolkit (GTT)* which was intended as a further step towards optimizing their translation process. At the same time, a second questionnaire (*Questionnaire B*) was prepared to encourage self-reflection in relation to the *GTT*-assisted translation process. It comprised 4 open-ended and fairly sub-divided questions which were to be answered by the students. The students were given an assignment to translate two short news items on a popular subject from English into Slovene and vice versa (different texts, no back-translation) and then to answer the questions.

We were interested in determining their general approach to translation: do they stop at individual translation problems and try to solve them or do they subsequently address them, a process by way of which they prefer to identify the big picture first, and only fill in the details at a later stage of the translation process? Further to this, we were interested in what problems they encountered, how they solved them and what tools they employed in doing this. The students' general level of satisfaction with the results was also ascertained, as were the reasons behind negative or positive answers.

Evaluation

Questionnaire A

Questionnaire A was answered by 33 students, anonymously. Multiple answers were also possible to some questions; for example: *What are the main deficiencies of GT,* and *What post-editing activity demanded most time*.

To contextualize the study, as well as to confirm (or refute) our expectations, we first asked the students whether they used *GT* and how they learned of it, as well as how often they used it. The majority – 74.5% - confirmed the use of *GT* when preparing for translation classes and further 15.5% reported of combining *GT* with *Amebis Presis*, a Slovenian-developed rule-based machine translation system, which is also freely accessible on the web. Only 10% of students claimed not to use *GT*. For the most part, (63%) students learned of *GT* by chance (e.g. by surfing the Internet) while the majority of the remainder (29%) were told of it by a colleague or friend. The introductory lesson at the beginning of the semester also addressed the issue of machine translation, thus 8% answered that they learned of *GT* in class. Most students (44%) reported that they used *GT* occasionally; 34.5% stated that they always used it, and 22% used it rarely. One student left this question unanswered.

The second thematic circle addressed the types of texts students translated using *Google Translate* (*GT*), how reliable they believed its output was, and their general opinion of *GT* as a tool. When asking the students about different types of text, we roughly differentiated between literary and non-literary texts, this because it was not our intention

to delve into the realm of type-specific translation phenomena but rather to generalise. Typology had been addressed in a previous class; therefore students were familiar with the main characteristic features associated with different types and styles of text. Approximately one half of students (48.5%) did not discern with regard to text type and reported using *GT* with all translations, whereas another half (48.5%) replied that they used it for non-literary texts only. One student further specified scientific literature and official documents, whilst two students did not supply any answers. No one believed that *GT* was very reliable, 45.5% claimed it was fairly reliable, and 51.5% believed it to be unreliable. Two students added that GT's reliability depended on the text type, whilst one student claimed *GT* was more reliable when translating from Slovene into English than vice versa. No students reported that *GT* importantly facilitated their work, the majority (78%), however, stated that it helped them with their translation assignments, but a deal of additional work was still necessary. One questionnaire remained unanswered.

The third thematic circle was designed to assess the students' critical attitude to *Google Translate* output. Among *GT*'s main deficiencies, students noted grammatical errors (40%) and problems with syntax, i.e. faulty composition of sentences (40%); 19% considered that vocabulary (lexis) was unreliable, whilst two students (1%) listed other reasons, namely: a disregard of context and a word-for-word translation approach. Since multiple answers were allowed, almost one half of the students (15) cited more than one reason, whilst 8 students chose all. All students edit *GT*'s output using dictionaries and other resources, among which they list corpora and terminology databases, specifically *Euroterm* and *Eurocorpus*, the database of Slovenia's *Government Office for European Affairs* and the corpus of (mostly) legal terms compiled in the context of Slovenia's accession to the EU. During the editing process, most time was consumed in formulating sentences (43%), the search for appropriate vocabulary (31.5%) and the correction of grammatical errors (23.5). Important too was the apparent awareness as to the complexity of these issues, with 16 students choosing more than one reason, and 4 citing all of them.

The two open-ended questions lastly addressed the students' assessment of the importance of translation engines in translator training (their present situation) and their projections as to its role in their professional careers (in the future). Somewhat surprisingly, only 3 students reported that translation engines were very important in their professional training, while on the other hand only 4 were convinced they were "not very important", "contributed little to their education", were no "substitute for a human translation" and would "merely support idle students". The majority believed translation engines were "fairly important", "useful" "helpful" and "facilitated work"; several also added that they speed up work and save time. About one-third of students (10) noted the good as well as the bad sides to translation engines, which is, we believe, responsible behaviour on their part.

As to the role of translation engines and − if we may generalize − of machine translation in general in students' future professional lives, we attained a fairly similar picture. Only a small number of them (3) believed that translation engines will become increasingly important and that they will probably use them a lot. On the other hand, only 4 students expressed their belief that machine translation will play "no role whatsoever", that its

importance will diminish and that it "will have no proper role". The majority were again of the opinion that translation engines will be "helpful", "will facilitate work" and "save time", but pointed to their limited applicability (lexis, framework translations, certain types of text). Five students also expressed their belief that in the future "better (in terms of quality) translation tools will be available" or that translation will become "increasingly automated".

Questionnaire B

Questionnaire B addressed students' experience of working with *Google Translator Toolkit* (*GTT*) focusing foremost on specific editing-related problems. The objective is also, to use its answers to assess the translation process, which should most probably be done in the continuation of the study.

Questionnaire B was answered by 36 students; two returned questionnaires were considered as unrepresentative since they only contained fragmentary answers. Based on the assumption that students were mostly unfamiliar with *GTT* – which proved to be correct – a short introductory lesson on *GTT* and its main functionalities (translation memory, statistical machine translation etc.) was provided to the students together with detailed written instructions on how to access and start working with *GTT* (see Appendix 1).

First, we were interested to learn whether or not this was their first contact with *GTT*; 100% responded that it was and one student did not provide an answer. Next, we inquired as to their general overall impression, and received overwhelmingly positive answers: 48.5% students reported that it was a "very good" or "very useful" experience, while 25% deemed that *GTT* was "good" or "useful" and 25% believed it was better than Google Translate. Only one student was dissatisfied with GTT, and believed it to be "too complicated to use" and "not at all attractive". At the same time 45% of the students expressed their surprise or amazement as to how good the output has been. Three students reported technical problems in accessing *GTT* or uploading files, while at least three were of the opinion *GTT* could be difficult to use without proper instructions. Two students were also afraid that translation professionals could become obsolete because the output was of such high quality, contrary to two of their colleagues who believed that still much has to be accomplished by the translators themselves.

Next, we wanted to determine their general approach to translation: whether they read the source text first, or whether they approached translation sequentially without knowledge as to the context or content, and further: whether they dealt with translation problems as they appeared in the text or subsequently addressed them at a later stage in the translation process. 65.5% of the students reported that they always or most often read the text first, whereby at least 3 specified this as being skim-reading only, and one student reported that they read and re-read the original text several times in order to attain perfect understanding of it. 34.5% reported to approach the translation "on the go". The majority (85%) approached individual problems sequentially as they appeared in the translation process; only 15% reported that they addressed them at a later stage of translation

process, which was, for the most part, after the entire text had been pre-translated by *GTT*.

Further to this, we were interested in how they approached *GTT* pre-translated segments; what problems they had encountered, and what tools they had resorted to in finding solutions. In terms of student approach to pre-translated output, two major tendencies were observable: students either let *GTT* translate the entire text and then edited the output, or they edited *GTT* output on a sentence-by-sentence - or rather segment-by-segment - basis, while simultaneously comparing the translation to the original. The majority (54%) opted for the segment-by-segment approach. There were several variations to this approach: two students reported translating individual segments first in their heads, and then compared these to the solutions offered by *GTT*; one student reported of having a look at the *GTT* output first, then translating the text in her head and subsequently comparing it to the *GTT* output, whereas the other student reported applying a word-for-word approach combined with a subsequent analysis of individual segments. Nine students opted for the second approach: they let the *GTT* translate the entire text and then edited the output. Two students combined this approach with a sentence-by-sentence analysis – one prior to *GTT* translation, and one subsequently; whereas one student actually prepared her own translation and compared it to the one produced by *GTT*. Two students reported devoting special attention to the headline; the translation of newspaper headlines had been rather extensively discussed during classes.

Based on students' answers, six main categories of problems were identified: vocabulary, syntax, grammar, orthography, text(ual)-type and (machine) translation related problems. General problems with vocabulary were the biggest single issue for students; 15 students (43%) reported to have had them while translating from Slovene into English (Slo-Eng) and 16 (45%) while translating form English into Slovene (Eng-Slo). Syntax-related problems were mostly associated with word order (6% Slo-Eng, 26% Eng-Slo) and sentence structure (8.5% Slo-Eng, 11% Eng-Slo); three students also mentioned that establishing coherence at the text-level was problematic. Grammar related problems were mainly concerned with the use of prepositions (17% Slo-Eng, 11.5% Eng-Slo), tenses (2.5% Slo-Eng, 2.5% Eng-Slo), articles (11.5% Slo-Eng, 2.5% Eng-Slo) and a distinctive feature of the Slovene language: perfective and imperfective verbs (14% Eng-Slo). Orthography-related problems constituted the next major group; we further sub-divided these into spelling-related (11.5% Slo-Eng, 11.5% Eng-Slo), capitalization-related (2.5% Slo-Eng, 2.5% Eng-Slo) and punctuation-related problems (2.5% Slo-Eng, 11.5% Eng-Slo). Text(ual) type related problems were mostly associated with headline style, which had previously been dealt with in class in quite some depth. Under (machine) translation related problems (8.5% Slo-Eng, 11.5% Eng-Slo), we understand the erroneous use of homonyms such as fan (noun) as in *device producing current of air* and fan (noun) as in *an enthusiastic devotee*; or mark (verb) as in *to indicate* and mark (noun) as in *brand.* Translation-related problems were also associated with pre-translated human errors, incomplete translations and blanks (where *GTT* offered no output or merely included the original text). These were also problems which made students break off the translation process and search for better options.

Among the tools used by the students during their editing of *GTT* output, they most often quoted the Internet, *Google* and other search engines (38%), followed by dictionaries in general (20%), books and electronic media − CDs/DVDs (14%), together with on-line dictionaries (14%) and other corpora (14%). The other tools identified as being used were spell-checkers, parallel texts, thesauri, glossaries, and other individuals (persons). Some reported that no tools were necessary in editing the output.

Finally, we determined the students' general level of satisfaction with the results of *GTT*-assisted translation, and tried to ascertain the reasons behind any negative or positive answer. Overall, an unexpectedly high level of student satisfaction with the results of GTT-supported translation was noted; indeed, all but one student reported that they were satisfied, and that the results were very encouraging. Two of them, however, expressed doubts and reservations in relation to such positive results, and suspected that mistakes must have occurred.

To us, as well, the overwhelmingly positive answers to *Questionnaire B* came as a surprise. "Perfect" *GTT* output was anything but expected, and we soon suspected that – despite instructions to the contrary – students must have either worked with a shared TM or that the topic was so well-covered by Slovene and English newspapers alike that somewhere on the web almost identical translated texts existed in both source and target languages. To vindicate our suspicions, we uploaded the texts again into GTT and found that the automatic translation search produced several exact matches from the global, shared TM, which invalidated our efforts to individualize students' translations. Further, we uploaded a new text into GTT and translated it by blocking the global TM and then translated the same text from another account using the global TM, which produced no matches.

To further corroborate our suspicions, *Questionnaire B* was distributed among students for a second time with a different underlying activity (assignment). The students had to select a text of some 250 words (the only specification being the theme − Christmas), translate it using *GTT*, and consequently answer the questionnaire. The questionnaires were returned by 36 students and the subsequent answers proved to be more consistent with our expectations. Judging by the general level of satisfaction, this time students were on average "partially" or "quite" satisfied with *GTT* output and claimed it demanded a lot improvements and corrections. The majority nevertheless seemed to agree that *GTT* provided a solid first draft and importantly speeded-up the translation process. Moreover, the majority claimed that the results were better than with *Google Translate*. TM supported by MT therefore seems like a helpful option to implement in translation training. This said, however, further analysis of the returned questionnaires is needed to corroborate these results.

Results and Implications

Upon an evaluation of *Questionnaire A*, results revealed that a vast majority of students were using *Google Translate* during their preparations for translation classes. In line with our hypothesis and in-class experience, students reported using *GT* either occasionally or

all the time. The fact that the majority of students themselves learned of this tool (by surfing the Internet) corroborates our observation as to their unstressed attitude towards Internet and on-line translation resources. The fact that the remainder learned of *GT* through colleagues and friends also testifies to the close-knit network of relations amongst students, an aspect which also contributes towards the development of their interpersonal competences and networking.

The second thematic circle of *Questionnaire A*, addressing the perceived reliability of *GT* output and its competence and applicability in the translation of different types of text, proved that students are not overly reliant on the machine's output, and are aware that additional editing is necessary. The fact that half of them use *GT* in non-discriminatory manner in the translation of all texts − literary and non-literary alike − points to a possible problem, highlighting the need for further instruction and structured activities addressing this issue. In this context, students' observations as to how the quality of *GT* output crucially rests on the type of text are also important, as was the fact that GT produces better results ('is more reliable') with Slovene as the source and English as target language than vice versa; as we identified, such is, to a large extent, the consequence of a disparity in the size of the Slovene-English and English-Slovene translation corpuses.

Grammar and syntactic issues were − in the students' opinion −*GT*'s main deficiencies, followed by unreliable vocabulary. Their answers were consistent with those provided to the question as to what editing activity was most laborious, where students identified correcting grammatical errors and formulating sentences as consuming the most time. These answers were, however, inconsistent with results provided by *Questionnaire B,* where students reported of having most troubles with vocabulary followed by syntactical issues while translating with *GTT*. This discrepancy could be explained in the light of findings by the *TRAP* research group at the *Copenhagen Business School* which revealed that student translators tend to focus on the lexical transfer process (Kelly: 2005 p.15) and that syntactic and grammar issues had been successfully resolved by other translators beforehand.

When asked about *GT*'s main deficiencies, multiple answers provided by almost one half of the students confirmed our expectations that they – at least in theory – were aware of numerous pitfalls associated with the use of *GT*. Important, too, is that according to their answers students are aware of the complexity of *GT* output editing. When asked about the most time-consuming editing activity, almost one half chose more than one answer, while some 10% selected all of the available answers.

When we enquired as to the importance of translation engines (machine translation - MT) in their current role as students of translation, they reported that such technology was of limited help and application; above all, it was their time-saving potential that was highlighted. Students believed that MT would facilitate their work and thus be helpful in their future careers, but would, nonetheless, have limited application (useful only for certain types of text as well as drafts, etc). Such findings were also in accordance with the opinion of professionals (Zetzche: 2010b) who make mention as to their speeding-up the process of translation, as well as providing better results for some subjects (business) than

others (the arts), as well as their application during preparations for interpreting assignments.

The *Google Translator Toolkit* (*GTT*) was presented to students as an on-line accessible service that facilitates the instant editing of *GT* output; its principal application is as a web-based translation memory (TM) tool, i.e. a 'database' that stores translations produced with the aid of *GT* - i.e. machine translation. The concept of TM had been briefly presented to students during a recent translation class, but they had not actually used a TM tool before. In order to attain individualized results and provide experience of working with such an engine, we instructed students to create an individual TM - i.e. to block the global (shared) TM function - and undertake an assignment to translate two short news items, one from Slovene into English, and the other from English into Slovene. As it has been proven earlier, these instructions were not followed by all, what subsequently put the study in a new perspective. Nevertheless, we still believe the results of our study to be indicative of the different approaches applied by novice *GTT* users, as well as the various problems they highlight as characteristic of this use. The failure to attain individualization, or perhaps the impossibility of such, has given the study a new turn, and prompted us to search for new methods and techniques as to how best incorporate this tool into translator training.

The primary aim of this activity was for students to familiarize themselves with the use of a TM tool and to reflect upon TM-supported (machine) translation, but also to observe how they individually go about translating. In this context, when asked about their general approach to translation, some two thirds reported that they read or skimmed through the original before commencing translation; the remainder began translating without any initial resort to a read through. It should be added that both approaches are accepted and supported in our translation classes; this said, however, we recognize the need for more research in this area in order to accommodate both methods in the best possible manner.

Further to all of this, we wanted to categorize students according to how they solved translation problems. In this aspiration we leaned on Robinson (1997) and classified students according to those who applied a *sequential-linear approach* (students undertook the process one step at a time, focusing on a single task until it was completed), and, alternatively, those who preferred a *contextual-global approach* (where the student preferred to grasp the main points quickly, build a general sense of the entire text, and only later complete the details). The majority of students reported opting for a sequential-linear approach, which could be partially explained by the fact that this approach is better suited to the segment-by-segment progression characteristic of TM applications. Others, nevertheless, opted for a contextual approach and this finding will help us improve our in-class teaching activities. According to Robinson, sequential-linear learners prefer to control the learning process and always prefer to know how to proceed in advance. Such learners will "gravitate towards highly structured working situations and texts. […] They are more likely to specialize in a certain subject area" and will try to avoid more spontaneous contexts (Robinson: 1997 pp. 74-75). Contextual-global

learners, on the other hand, are ‘multi-taskers’ who want to work on many things at the same time; they easily grow bored and want a changing environment.

For the purposes of this analysis, translation problems have been categorised at a general level with a view to identifying areas that demand more attention by the teacher in terms of creating improved learning activities and/or content. As expected, most students reported having vocabulary problems, which can be solved with the guided translation-oriented use of dictionaries, glossaries and corpora, as well as through advancing the individual’s Internet search skills. Syntax- and grammar-related problems are a recognized issue in English-Slovene translation, and pertain to the relative linguistic distance between the two languages. To this end, more comparative grammar activities need to be incorporated into the learning process addressing, among other issues, the translation of Slovene imperfective and perfective verbs (denoting completed and continuing activity), English articles and prepositions. At syntactical level, word order and overall sentence composition need to be addressed in more detail as well as coherence on the text level.

Orthography-related problems – particularly in terms of spelling, capitalization, word break and punctuation issues – were less pronounced but nevertheless pointed to the need for thorough (spell) checks and attentive editing. Similarly, (machine) translation-related problems (use of homonymous expressions, pre-translated human errors, incomplete translations and blanks) are easily spotted and mostly recognized by the students without further difficulty. Lastly, text-type-related problems belong to the realm of advanced editing and should be based upon prior knowledge of stylistics in both languages.

Detailed accounts of translation problems and solution processes surpass the prescribed limitations of this particular study, but will undoubtedly be addressed at a later stage. It also should be added that we are aware of the rather limited number of participants and believe that a greater sample size would have yielded better and more representative results. It is in this light that we hope to have identified a problem and encouraged critical readers to undertake new studies, since a lot more research is undoubtedly needed.

Conclusion

As Pym (2006: p. 18) already established, technology is not an option in today’s world of professional translation; it is a necessity. Practically all translating is aided by computers and is increasingly being taken away from the personal computer and out of the home, and into the virtual environment. Freely accessible on-line translation memory tools together with statistical machine translation systems have been developed to a standard where they can provide solid first drafts, thus importantly speeding up the translation process and avoiding unnecessary repetition of labour. This said, however, current ICT is nowhere near replacing the human translator; it facilitates their work and improves efficiency, but translators need to remain aware as to its limitations.

All such considerations must necessarily be taken into consideration when designing activities for translator training capable of supporting and reinforcing translator

competencies, from language, subject area and cultural knowledge, to professional and interpersonal skills, self confidence and socialization. Traditional didactic models no longer work in the contemporary computer-connected classroom. Students of translation, spending long hours working on the same text in a near-perfect information vacuum, have long been a thing of the past. Focused and individualized learning utilizing the advantages offered by modern technology are the present. Categories of problem - such as those pertaining to vocabulary, syntax and grammar - which have been identified in this respect, could constitute milestones on the way to better-structured lessons centred upon such issues. The future is unclear but judging by the students' responses, translators are not destined to be mere editors of machine output or made redundant.

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Notes

[1] For the purposes of this article, the terms Internet and World Wide Web (or the Web) are used interchangeably. The author is, however, aware that the Internet primarily refers to the global data communications system, i.e. the hardware and software infrastructure that provides connectivity between computers, whilst the Web - as a collection of interconnected documents and other resources - is principally only one of the services communicated via the Internet.

[2] http://technology.iafrica.com/features/698758.html

[3] http://en.wikipedia.org/wiki/Web_search_engine

[4] http://translate.google.com/

[5] http://translate.google.com/toolkit/