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Translation testing and evaluation: A study on methods and needs

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Abstract
The use of technology in the translation process has already become a common practice. Translation evaluation in most training programs in Turkey, however, seems to ignore the place of technology since exams are taken using printed resources only. The current study aims at exploring students' use of time, performance and reaction when they translate texts using different resources and in different settings, thus, seeing in which contexts students feel better and can achieve better results when tested. Nine senior translation students participated in the study. All were native speakers of Turkish and advanced-level learners of English. Each participant was given four different types of texts: technical, literary, legal, and media. Participants translated each text from English into Turkish in 40 minutes using three different ways. All translation sessions were supervised: (1) using printed resources only, (2) using online resources only, and (3) post-editing target texts produced via Google Translate. After each session, the participants completed online questionnaires. The analysis of the questionnaires and evaluations of the translations suggest that novice translators tend to prefer working in an electronic environment using Internet resources. The novice translators did not seem to be very comfortable with post-editing machine translation outputs, especially for literary texts. No major differences, in terms of their scores and use of time, are observed across the three sessions, and individual preferences of the students and the perceived difficulty level of the texts seem to have more effect on the time use and performance. The answers to the survey questions also suggest that exam settings for the translation courses need to be customized so that Internet resources and other translation tools can be integrated.

Keywords: translation assessment, translation technologies, post-editing, translator training

1. Introduction

Turkey has witnessed a proliferation of degree programs in translation in the last 20 years. Currently, there are over twenty higher education institutions which offer undergraduate programs in Translation and Interpreting (T & I) or Translation Studies (TS). Due to the limited number of graduates of T&I or TS doctoral programs in the country, most instructors working in these institutions come from a variety of academic

backgrounds such as ELT, Linguistics, and Literature Departments, which affect the way they view, teach and assess translations.

Regardless of their backgrounds, the general tendency of translation trainers for the practice of testing falls parallel with the overall approach to testing and evaluation in Turkey. The typical translation exam involves the translation of a written text which students see for the first time. Students are allowed to use only dictionaries for resource and given limited time. Far from being real translation situations, such conditions are unfavourable, not to mention unrealistic (Dungan, 2011). Hatim and Mason (1997) point to the potential shortcoming of these tests and state that in such exams:

> […] all the skills involved in translating are tested at once and errors do not necessarily show which skill is deficient. Moreover, test-takers are often prevented from demonstrating one of their skills—their 'transfer competence'—simply because the source text is too difficult for them to analyse and understand properly" (p. 198).

In addition, if the text is selected according to its level of difficulty alone, then any number of problems might occur while students attempt to translate such texts under typical exam conditions in limited time. Kelly (2005) also criticizes such tests, stating that they are marked on the basis of the number of errors and that the positive aspects of students' work are not usually taken into account. Further complicating the task of evaluation is the lack of consensus in assessment.

The type of assessment that is commonly seen in the Turkish education system is summative assessment, which involves assigning grades throughout the semester for a variety of set tasks such as exams, quizzes and assignments. The students are then given a total average mark at the end of a semester to pass or fail a particular course. Traditionally, in the context of translation departments, the practice of testing involves the translation of a written text, selected on the basis of its difficulty, which students see for the first time. Although marking translations as a product tends to ignore the competencies of students during the translation process and penalizes students for their mistakes, such marking appears to be the common practice in the Turkish education system (Dungan, 2013). In other words, the activities translators engage in during production of a complete translation are not taken into consideration in the evaluation of translation, which is—or should be—an important aspect of assessment. The current study will try to delve into the translation process partly by investigating the use of different means for completing the translation task and examining the translators' views on each means.

While a typical translation exam environment involves the use of only paper dictionaries as a resource with the task to be completed within the limited time allotted, the use of electronic and online resources in the translation process needs to be integrated in the practices of testing and evaluation. Although no single approach is taken among Turkish universities in respect to the teaching of technology (Şahin, 2013), in most of those universities, at least introductory courses on technology are included in translation curricula so that students become familiar with the existing resources that they can use in their tasks. The term "technology" in this article covers online/electronic dictionaries, termbanks, termbases, translation memory systems, corpora, terminology management tools, online document management software, word processing and desktop

publishing programs, social networking, search engines, machine translation systems, text-to-speech/speech-to-text tools, optical character recognition programs, and computers and its peripherals such as scanner, printer, digital camera, etc.; in short, all software, hardware, applications and tools that can facilitate the process of translation. The current working environment of a professional translator is often visualized as a person working in front of a computer which is connected to several peripherals such as a printer, scanner, headphones, webcam, etc. However, although trying to create an authentic learning environment for translation students during their undergraduate years, almost all translation departments tend to ignore the potential contribution of online resources and machine translation to the translation process while assessing students' performance. This kind of assessment is likely to detach translation activity from the real-life experience, and thus create a distorted picture of the students' performance.

This research study focuses on the comparison of translations of texts from English into Turkish done in three different ways: human translation, machine-aided human translation, and human-aided machine translation. The study aims at exploring the contexts in which students feel more comfortable and competent towards achieving better results when being tested, which would possibly contribute to the effort of making translation exam settings closer to real-life conditions where technology is becoming omnipresent day by day.

2. **Literature Review**

In the early years of the twentieth century, the field of translation technologies seems to have emerged as a new sub-discipline in translation studies (Alcina, 2008). The use of technology can now be observed in almost all phases of the translational process. Alcina (2008) outlines six phases of the process, and the use of technology during each phase is evident:

1. looking for clients
2. receiving translation work
3. understanding the text
4. translation (writing the target text)
5. presentation (sending translation back to client)
6. post-translation

In translator training programs in Turkey, the main focus is usually on the third and fourth phases, and the students are generally assessed based on their translation product. With the aid of technology, as outlined in Table 1, Alcina (2008) argues that translators may use various resources – most of which also will be included in the current study, in both phases – to assist their translation.

Vargas Sierra and Ramírez Polo (2012) give a good outline of the changes in the field of translation with the advent of new technologies and the Internet, and emphasise the importance of integrating technology into translator training programs. The researchers offer a new model called TWITT (Training Web Interaction and Translation Technologies) in which "the students use different ICTs to collaborate with each other by sharing

Table 1. Phases 3 and 4 of the translation practice as outlined by Alcina (2008, pp. 91-2)

Phase 3 - Understanding the text	● Documentary search by means of web pages on the Internet ● Consulting bibliographical resources in libraries and institutions through their web sites on the Internet ● Use of general and specialised, monolingual, bilingual and multilingual electronic dictionaries on the Internet or on CD-ROM ● Consulting electronic text corpora on the Internet or on CD-ROM ● Looking up information in a personal text corpus by means of text analysis or concordance software ● Consulting specialists in a particular subject by means of expert forums ● Consulting other translators and terminologists by means of mailing lists, news groups and virtual communities
Phase 4 - Translation (writing the target text)	● Use of word processors ● Use of a spelling, grammar and style checker and/or corrector, or the tools doing a similar job included in the word processor ● Use of the revision tools in the word processor (protect document and track changes) ● Use of interactive assisted translation (translation memories) ● Use of machine translation

materials, information and knowledge with the aim to get pedagogical and social benefits during the course" (para. 41).

The use of technology in the translation process and the need for translators to learn about technology has also been emphasized by several researchers who published books (Austermühl, 2001; Bowker, 2000; Somers, 2003) or wrote chapters (Robinson, 2003) on translation technologies. Learning and teaching translation with technology has also been a subtopic of academic conferences, and indeed several – such as *Tralogy* (Paris, 2013) and *Translating and the Computer* (London, 2013) – have focused on this topic particularly. The main theme of the *XXth FIT World Congress* (Berlin, 2014) was also declared as "Man vs. Machine? The Future of Translators, Interpreters and Terminologists", which all point to the growing importance of technology use in translation.

The variety and volume of the texts to be translated has grown with the advent of the Internet and increasing use of social networking sites (Cronin 2009). O'Hagan and Ashworth (2002, p. 11) outlined the new demands in the translation market as translation of online newspapers and magazines, e-books, online product documentation, web pages, subtitles. Of course, the increasing volume of the translation task is likely to create time pressure, and the availability of various resources for translators calls for excellence in the field. All these developments urge translator training programs to integrate technology into their curricula and teach novice translators how to use technology effectively. Almost all translation companies, especially those who certify under EN15038 – a quality standard for translation services – now require some sort of technological competence for job applicants as part of their compliance with the standards (cf. Dungan, 2013). One of the conclusions of Lafeber (2012), in her comprehensive dissertation investigating the set of skills and knowledge required by inter-governmental organizations, is that technology use has an important place in recruitment decisions. This

requirement can also be seen distinctly in the job descriptions for multilingual organisations such as the European Union. In fact, technological competence is listed one of the six competences in the European Master's in Translation (EMT) programs (EMT Expert Group, 2009). The European Commission, Directorate-General for Translation (2012), in the document for the EMT strategy for 2012 and beyond, defines the second objective as "[to] acknowledge, recognise, and respond to changes in translation training imposed by technological and market developments" (p. 2).

Another important skill required by today's translation demands is the post-editing of machine translated texts (O'Brien, 2002). As the volume of the texts to be translated increases, machine translation serves as an indispensable tool for multilingual countries and organizations, international companies and institutions. However, machine translation by itself has not yet reached the point of perfection for most of the text types, particularly for literary texts, and for many language pairs such as English-Turkish. Most texts to be used for dissemination purposes (Hutchins, 2003) need to be post-edited and sometimes even pre-edited by professional translators so that the target text reflects the form and content of the source text accurately and intelligibly. This brings up the need for introducing and teaching post-editing into the translator training programs. O'Brien (2002) outlined the contents of a course on post-editing, and emphasised this need over a decade ago. Although there have been sporadic attempts to introduce post-editing into the translation curriculum (Şahin, 2013, January), there seem to be no translation activities involving the post-editing of machine-translated texts within Turkish universities. Therefore, students' possible performance on such a task has been a veritable mystery.

The different contexts that are explained above present different challenges for translator trainers, because typically a single approach – i.e. testing students' translation performance with the help of printed dictionaries in a classroom setting using paper and pencil – is adopted for translation assessment in Turkey. Therefore, investigating whether students' performance and reactions differ across settings could prove to be beneficial insofar as trainee translators' performance could be assessed to reflect, as much as possible, what are real-life working conditions.

To this end, the current study aims to answer the following research questions:

1. Does using different resources during the translational process affect translators' performance in terms of efficient use of time and the accuracy of the product of translation across four different text types for the English-Turkish language pair?
   a. using printed resources
   b. using Internet resources
   c. using machine translation & Internet resources (i.e. post-editing)
2. What are novice translators' reactions to using different resources during the process of translation?
3. What are the implications of these three different settings in rethinking testing and evaluation in translator training programs?

3. Methodology

In order to answer the foregoing research questions, we analysed students' translations of different texts done using different resources. Both qualitative and quantitative data from student questionnaires were used in these analyses.

3.1 Participants

The study was conducted during the Spring 2012 semester; the participants were nine senior students enrolled in an undergraduate translation program at a middle-sized foundation-funded university that trains future professionals for the translation industry. The trainers in the program are scholars from a variety of backgrounds such as linguistics and translation studies. All participants had some experience with translating different text types such as media, legal, and literary texts. All exams for subject-specific translation courses in the program were conducted in the traditional way: namely, students were allowed to use printed dictionaries to translate texts from English into Turkish in a pre-determined amount of time in a classroom setting. All students took a course, taught by Şahin, on computer skills, in which various Internet resources to be used in the translation process were introduced, advanced features of word processing programs were explained, and machine translation was discussed. The participants did not have any previous experience with post-editing, nor did they have any training. Participation in the study was on a completely voluntary basis, and the translations performed by participants were not part of the formal study or assessment requirements of their course.

3.2 Procedure

There were a total of three sessions held within a month, with at least a one-week break between two sessions. In each session, participants were asked to translate four different texts: a technical, a literary, a legal, and a media text. The length of each text was approximately 300 words, and they were analysed using *Lexicool*, an online analysis tool, which "provides information on the readability and complexity of a text, as well as statistics on word frequency and character count" (lexicool.com, 2014). Texts were chosen on the basis of their equivalence in terms of readability, difficulty, and lexical density. The texts for the second session of the experiment and their analyses by *Lexicool* are presented in Appendix B.

In keeping with the standard amount of time typically allotted for texts of such length, the participants were allowed 40 minutes for each text, giving a total of 160 minutes per session. Breaks were allowed if needed during the sessions and were not included in the total task time. All sessions were supervised by the researchers.

In the first session, the participants used only printed resources (a bilingual dictionary and a monolingual dictionary), and typed their translations using a word processing program (they were also given the option of using pen and paper to produce the translations).

In the second session, the participants had access to the Internet, and they were free to use any resources except online communication tools. For this particular session, the participants only had the option to use word processing programs to type their translations.

The third session did not involve an actual translation task, but rather a post-editing one. The four texts were translated using the Google

Translate machine translation system, and the participants were asked to post-edit the machine translation output, again using any Internet resources they deemed necessary.

As a translation brief for all of the texts, the participants were asked to produce 'quality' translations—i.e. reflection of both the style and the genre of each source text into the target texts as well as the completion of the task within the time allotted—for all texts.

3.3 Instruments

The main instruments for the study were the translations and the questionnaires that were administered to the participants before and after each session. The pre-session questionnaire was designed to collect information about each participant in order to make sure that there is no discrepancy among the participants in terms of technological competence. The questions were on their level of computer literacy, comfort level of working with technology, demographic information, expectations and concerns. The questionnaires were administered using Google Forms a week before the sessions started. The post-translation questionnaires were designed to collect information about students' level of satisfaction with their own work, time use, experience in translating similar texts, use of resources, and any perceived difficulties with regard to each specific setting.

3.4 Analysis

The translations were evaluated by two independent evaluators using a grid based on Orlando (2011), which is presented in Appendix A. The evaluators were the authors who have also been the instructors of the participants throughout their studies. All translations were coded by a third person before submitted for evaluation in order to eliminate any bias. A total of 108 translated texts (3844 words) were evaluated. Pearson's *r* for 108 evaluated translations was 0.946, which shows a high level of reliability.

Correlations

		Evaluator1	Evaluator2
Evaluator1	Pearson Correlation	1	.946**
	Sig. (2-tailed)		.000
	N	108	108
Evaluator2	Pearson Correlation	.946**	1
	Sig. (2-tailed)	.000	
	N	108	108

**Correlation is significant at the 0.01 level (2-tailed).

4. Results and Discussion

The evaluation of translations, combined with participants' answers to the survey questions, provided answers to the research questions regarding the difference in participants' performance across different settings:

- using printed resources, Internet resources, and machine translation & Internet resources

- participants' reaction to using different ways for the translation activity, and
- the implications for translator training programs.

One of the participants did not translate the legal and media texts in the first session, and therefore was excluded from the analysis for these two texts. According to the results of the pre-session questionnaire, no significant difference was observed among the participants in terms of experience with technology, post-editing, and translating various genres of texts, due to the fact that they all followed the same curriculum.

4.1 Time

The participants had 40 minutes to complete each translation task. Approximately 80% of the texts were translated within the given time period. In Tables 1 and 2, the percentages of completed translations are presented. As seen in Table 1, the participants completed the translations of literary texts the most. The figures in Table 2 suggest that when using printed resources, the participants completed a slightly higher percentage of the translations.

After each session, the participants were asked whether the time allocated for each task was enough for them to complete the translation task (See Chart 1). Their answers seem to be in parallel with their translation products as presented in Table 1.

Table 1. Average percentage of texts translated by the participants

	Percentage of the texts translated by the participants			
	Technical Texts	**Literary Texts**	**Legal Texts**	**Media Texts**
Average	81.15	84.83	81.93	79.02

Table 2. Average percentage of texts translated by the participants across sessions

	Percentage of the texts translated by the participants		
	Session 1 – printed resources	**Session 2 – Internet resources**	**Session 3 – MT post-editing**
Average	86.48	80.92	77.80

Chart 1. Was the time given sufficient (across tasks)?

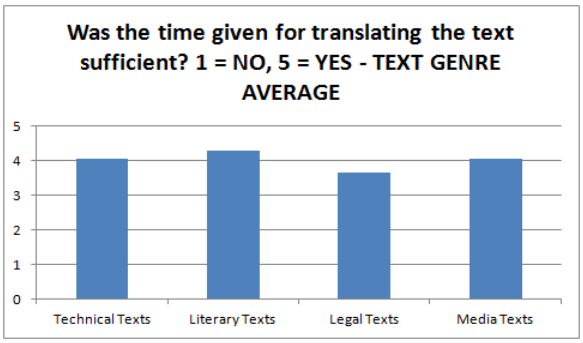


Chart 2. Was the time given sufficient? (across sessions)

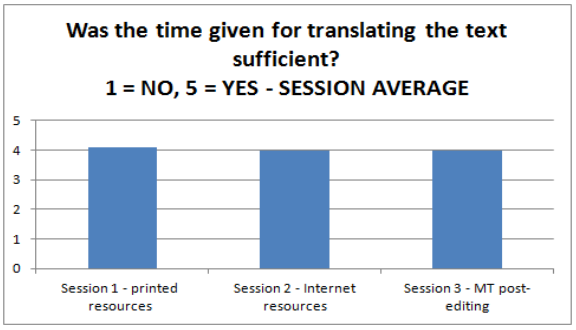
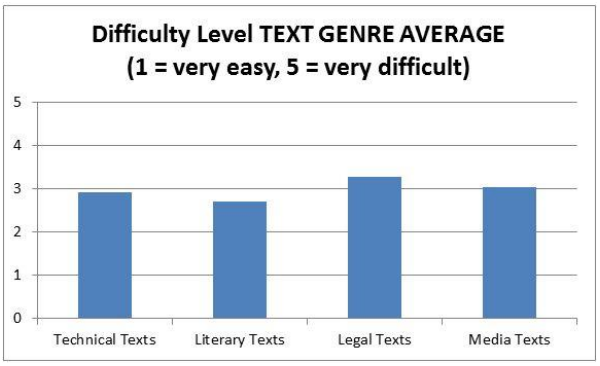


Chart 3. Difficulty level of texts reported by the participants



According to the participants' answers to the survey questions, more time seems to be needed for the legal texts, whereas the participants seemed to have almost enough time for the literary texts (See Chart 1). This finding can be explained by the relatively higher level of difficulty reported by the participants for the legal texts (see Chart 3). Looking across the three settings, there seems to be no significant difference between them – that is, the use of different resources in the translation process did not change participants' perception about the time allocated for the translation task (See Chart 2). The participants also stated that their translation could be much better if more time were allocated for the tasks, especially in the second session where they used Internet resources in the translation process. This finding might be explained by the fact that the more comprehensive resources the participants have, the more time they are likely to spend on documentary research or dictionary search.

4.2 Scores

Each translation was scored by Şahin and Dungan, who taught various courses to the participants in the previous years of their study. For scoring, Orlando's grid (2011) was adapted according to the current practices of translation evaluation in many translator training programs across Turkey. Each text was scored out of 90. Since the evaluation focused on the participants' translational product, as opposed to their process, a product-oriented evaluation method was adopted.

The average net scores of the participants for each subject-matter for the three sessions show that there seems to be a significant decrease in the scores for the literary text (Literary Text 3) where the participants post-edited the machine translation output. Another decrease in the average net

scores is observed in the translations of the technical text (Technical Text 2) in the second session where the participants used only Internet resources in the translation process. These two findings can be related to the perceived difficulty level of the texts. According to the survey results, the average difficulty level for the Literary Text 3 and the Technical Text 2 were reported as 4 and 3.44 respectively (*1 = very easy, 5 = very difficult*).

The average net scores for the four subject-matters show that the highest scores were obtained in the literary translation whereas the lowest were in the media translation (see Table 4). Literary texts were also reported as 'less difficult' in the student surveys. However, although the difficulty level of the legal texts is reported as the highest by the participants, the lowest scores were obtained in the media translation. This is likely to suggest that the increases or decreases in the scores cannot be explained only by the perceived difficulty level of the texts reported by the participants.

Table 4. Average net scores for each text type (out of 90)

	Technical Texts	**Literary Texts**	**Legal Texts**	**Media Texts**
Net score Text Type Average	48.61	52.55	48.02	45.95

When calculated across sessions, the average net score of the participants for all texts is the highest for the first session where the participants used only printed resources in the translation process. The lowest average score was calculated for the third session, where the machine translation output was post-edited by the participants. However, when cross-referenced with the average difficulty level of the texts per sessions, a negative correlation is observed. The scores in the first session seem to be the highest because the average difficulty level of the texts reported by the participants was the lowest (see Tables 5 and 6).

Table 5. Average net scores for each session (out of 90)

	Session 1 - printed resources	**Session 2 - Internet resources**	**Session 3 - MT post-editing**
Net score Session Average	51.68	47.22	45.80

Table 6. Average perceived level of difficulty for each session (1 = very easy, 5 = very difficult)

	Session 1 – printed resources	**Session 2 – Internet resources**	**Session 3 – MT post-editing**
Difficulty Level Session Average	2.75	3.05	3.14

Table 7. Average net scores for each text type in three sessions (out of 90)

	Technical	Literary	Legal	Media
Session 1	51.55	61.20	48.02	45.95
Session 2	39.71	61.72	48.75	38.69
Session 3	54.57	34.72	48.19	45.71

Based on the scores for each text type across sessions, it is observed that there is a considerable decrease in scores for the literary text in the third session and the technical text in the second session (see Table 7). As mentioned above, the difficulty level of the texts perceived by the participants is likely to have caused such low scores for these two texts.

5. Translation process

The participants were asked to answer specific questions in the surveys for each session in order to have an insight into the translation process and to be able to compare the participants' views for each session.

5.1 First session – only printed resources

One of the important observations for the first session was that none of the participants chose to use pen and paper to write their translations. This suggests that for the new generation of translators, computers are the main workspaces, as also observed in the participants' answers to the preliminary survey questions. All participants indicated that their level of comfort working with computers is high, and they write their translation tasks in word processing programs both as drafts and final products. They also reported unanimously that they use printed resources rarely, whereas they resort to online dictionaries and web search very often. In the first session, the participants felt the lack of Internet resources the most for the legal text and the least for the literary text (see Table 8).

Table 8. The perceived need for using Internet resources for each text type (the first session)

	Technical Text	Literary Text	Legal Text	Media Text
How much did you see a need to use the Internet resources for your translation? (1 = not at all, 5 = a lot)	3.55	2.11	4	3.55

5.2 Second session – Internet resources

In the survey after the second session, the participants were asked to compare the help of resources between the first and second sessions. The participants reported that using the Internet in the translation process made their work a lot easier (4.33 on a 5-point Likert scale, where 5 = a lot) for all four texts. The participants' satisfaction levels for their translations (regardless of their score) were highest for the second session and lowest

for the third session (see Table 9). When cross-referenced with the actual net scores, while there is an overlap for the third session, the first sessions' scores were higher than the second's. The participants stated that they did not see any need to use a printed dictionary or a similar resource in the translation process for all of the texts. The percentage of unknown vocabulary items that the participants were able to find using Internet resources was slightly higher for the technical and legal texts than the first session, and vice versa for the literary and media texts.

Table 9. Participants' level of satisfaction with their performance in the translations

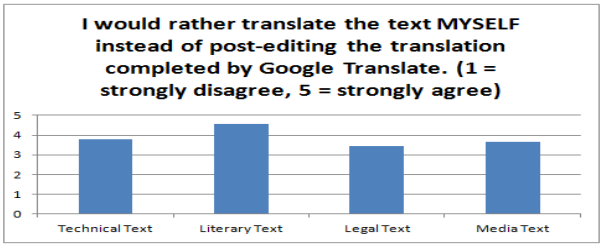
	Session 1 - printed resources	Session 2 - Internet resources	Session 3 – MT post-editing
How satisfied are you with your translation? (1 = not at all, 5 = a lot) – Session Average	3.32	3.64	3.14

5.3 Third session – MT post-editing

The participants reported that their post-editing for the technical and media texts took about 10 minutes less than the time it took them to translate these texts themselves. The time saved with post-editing for the legal and literary texts was reported to be even less. In line with the low average net scores for the third session, where the participants post-edited the texts translated by Google Translate, the participants stated that they would rather translate the texts themselves instead of post-edit the machine translation output, especially for the literary text (See Chart 3). Another

observation from the third session, according to the participants' answers to the survey, was that using Google Translate in the translation process was reported to make the translation task easier for the technical and media texts (3.11 on a 5-point Likert scale) while it did not seem to have much of an effect on legal text, and almost none for the literary text.

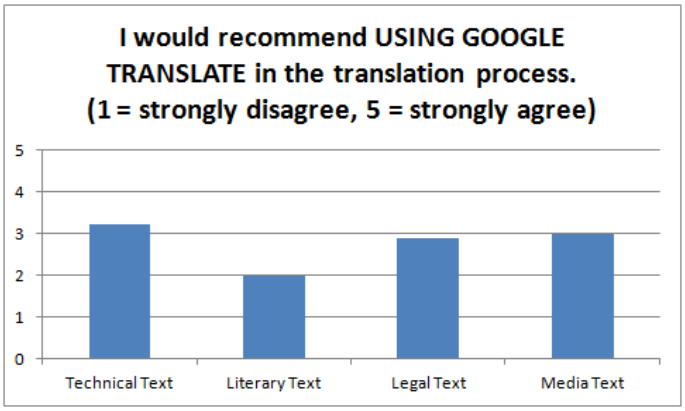
Chart 3. Post-editing or translation from scratch?



The participants reported in their post-translation questionnaires that they spent about ten minutes (of the 40 minutes allotted for the whole task) on using resources (dictionaries, web pages, etc.) in the MT post-editing session. They spent a little more than 5 minutes in the second session and almost 5 minutes in the first session. Using Google Translate in the translation process was not suggested for the literary text by the

participants (See Chart 4). The highest score was for the technical text (3.22 on a 5-point Likert scale) and the participants were neutral about the media text and the legal text. When asked to rate the overall effectiveness of translating a text for the three sessions, the participants reported that the first and the third sessions were not very productive in terms of using their time effectively in completing their task; they were more positive about the way they completed the translation task using Internet resources.

Chart 4. Recommend Google Translate?



The participants also expressed their views on the use of machine translation in the translation process by answering survey questions after the third session. Some of the advantages of MT use were listed as:

- increased speed in non-literary texts
- help with vocabulary and word choice, and
- increased awareness of the place of machines in the process.

There were also some disadvantages listed, such as:

- Confusion
- lack of trust in MT
- losing time post-editing the MT output (which was natural because the participants did not receive any training on post-editing before this experience)
- There was also consensus among the participants that machine translation was not at all suitable for the literary texts.

6. Conclusion

The current study aimed at examining novice translators' performance in three different settings, where they:

(a) used only printed resources,
(b) had access to the Internet resources, and
(c) post-edited machine translation output again with access to the Internet resources.

The main focus was on the scores, the use of time, and the participants' views about the effectiveness of each test setting. All these data came from the translations and the participants' answers to four

different surveys: one before the experiment started, and three respective surveys conducted after each session.

Although the study does not seem to present clear-cut distinctions between the three different settings in terms of scores and time use, it is still possible to draw a few conclusions which are likely to shed light on current learners' preferences and attitudes. First of all, for all texts, the participants were able to complete 80 per cent of the translation, which corresponds to about 250 words in a 40-minute time period. It is important to note that when we look at individual results in terms of time use, we observe differences across participants. This suggests that in a regular classroom setting, the exams may not reflect the students' performance totally since it may be constrained because of time pressure. However, it is also a fact that translator training programs aim at providing learning environments closer to real-life working conditions, which usually involve time pressure.

Although a more concrete picture can be seen in the participants' scores, there still seems to be no significant pattern for any participant for a specific session or for a specific source text (i.e. technical, legal, literary, media texts). Relatively higher or lower scores for certain texts can sometimes be explained by the difficulty level of the source text perceived by the participants. Yet, this explanation is not always valid for certain decreases or increases in the scores. The average net scores of the participants across sessions and the difficulty level of the texts reported by the participants seem to be negatively correlated, which makes it difficult to conclude that the participants' performance in one setting is superior than others or vice versa. The impossibility of administering different texts with absolute similarity (as seen in Appendix B) and variability of the participants' previous experience also make it difficult to reach clear-cut conclusions.

Based on participants' answers to the survey questions and main observations in the translation sessions in the current study, it can be argued that the novice translators seem to have a lack of trust in machine translation and are less comfortable with post-editing: this can be related to a relatively lower quality of English-Turkish MT output, and lack of training in post-editing. On the other hand, the participants seem to be more dependent on technology, and tend to use Internet resources very often in the translation process.

In a period where there are discussions on how technology use is threatening the art of cursive writing (Perrette, 2013), it might be fair to argue that the new generation of translators will refer to printed resources less and less during their translation, if indeed they use them at all. If we can differentiate the impacts of language competence and technological competence on translation performance, it would be possible to identify whether differences in performances are due to the lack of technological competence and lack of resources or to the lack of language competence.

In other words, once it is determined whether ineffective translational decisions are a result of problems with language or inability to use technology properly, it would be possible to observe the real impacts of technology use on the translation performance. The participants in the current study seemed to have similar levels of technological competence, but in bigger groups of students, it might be difficult to have such homogeneity. Furthermore, based on the results of the current study, it can be argued that allowing the use of technology resources in exam settings

looks like an option for translator training programs to reflect real-world work settings. Moreover, it would be quite enlightening to compare students' performance in different contexts (i.e. different language pair, different student profiles, etc.) by trying all three settings outlined in the current study. To give a concrete example from the current study, it might make sense to create different exam settings for different types of texts. For instance, while the use of Internet resources for certain types of texts, such as legal documents, appears to be very important, it does not seem as relevant for, say, literary texts.

The current study had several limitations, one of which was the relatively low number of participants. Although advertised to a total of fifty students, just two fifths of all invitees replied, and only nine were able to participate in the study. A larger number of participants would make it possible to use inferential statistics to compare performances. Another limitation was the use of different texts for each session, which made it difficult to compare results. The researchers tried to eliminate this limitation by using a text analysis tool to ensure similar difficulty level for each session, but the participants' perception of the texts differed. For future research, more qualitative data can be collected through interviews, think-aloud protocols, etc. to support quantitative data.

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Criteria	Grades	Descriptors
Overall comprehension of the ST (misinterpretations with more or less effect on accuracy)	0 2 4 6 8 10 12	0-2: Inadequate grasp of information. Major misinterpretation(s) with very significant effect on accuracy. 4: Information misunderstood. Misinterpretation(s) with significant effect on accuracy. 6: Adequate level of understanding. Some misinterpretation(s) with some effect on accuracy. 8: Adequate level of understanding. Some misinterpretation(s) with little effect on accuracy. 10: Good understanding of the text, its register and its nuances (only slight misinterpretation(s) with a very slight effect on accuracy. 12: Very good understanding of the text, its register and its nuances.
Overall translation accuracy / Transfer ST>TT (mistranslations with more or less effect on accuracy)	0 2 4 6 8 10 12	0-2: False transfer of information. Major mistranslation(s) with great effect on accuracy. 4: Some mistranslation(s) with significant effect on accuracy. 6: Adequate command of the text despite some mistranslations or changes in emphasis. 8: Adequate command of the text despite a few mistranslations or changes in emphasis. 10: Good command and transfer of the text. (Only one or two minor mistranslations or changes with a very slight effect on accuracy) 12: Very good command and transfer of the text.
Omissions / Insertions (with more or less effect on accuracy)	0 2 4 6 8	0: Major omissions / insertions or large number of omissions / insertions with very significant effect on accuracy. 2: Several omissions / insertions with significant effect on accuracy. 4: Some omissions / insertions with moderate effect on accuracy. 6: Few omissions / insertions with little effect on accuracy. 8: No unjustified omissions / insertions.
Terminology / Word Choices (affecting more or less the localized meaning)	0 2 4 6 8	0: Incorrect choices made with very significant impact on meaning. 2: Inadequate choices made with significant impact on meaning. 4: Inadequate choices made with some impact on meaning. 6: Good choices made. Minor amendments required. 8: Very good choices. No changes required.
Grammatical Choices / Syntactical Choices (producing more or less distortion to the meaning)	0 2 4 6 8	0: Incorrect choices made with very significant impact on meaning. 2: Inadequate choices made with significant impact on meaning. 4: Inadequate choices made with some impact on meaning. 6: Good choices made. Minor amendments required. 8: Very good choices. No changes required.
Spelling Errors	0 2 4 6	0: Multiple errors/serious errors with very significant effect on overall readability 2: Numerous errors with significant effect on overall readability. 4: Minor errors only with very little effect on overall readability. 6: No errors.
Punctuation Errors	0 1 2 3	0: Multiple errors 1: Some errors 2: An error/a few errors 3: No errors
Formatting Errors	0 1 2 3	0: Multiple errors 1: Some errors 2: An error/a few errors 3: No errors

Appropriateness for Target Audience	0 2 4 6 8 10	
Readability / Idiomatic correctness	0 2 4 6 8 10	
Function / Completeness	0 1 2 4 6	
Style / Presentation / Genre	0 1 2 4	
TOTAL (/90):		

Appendix B

Texts for the second session and their analyses by *Lexicool*

TEXT 1[1]

Fixing a Small Drywall Hole

In this article, we'll tell you how to fix both a small and a large drywall hole. We'll start with a small hole.

To make a repair to a small drywall hole without a kit, follow these directions:

Step 1: Prepare tin can lid that is at least 11/2 inches more in diameter than hole in drywall for backing piece. Use keyhole saw to cut out narrow horizontal slit in wall on each side of hole. Measurement of hole plus both narrow slits should equal diameter of lid so you can insert lid sideways into hole.

Step 2: Use awl to punch two holes in center of lid. Thread 12-inch piece of wire or string through holes.

Step 3: Holding ends of wire, slide lid through slit. Still holding wire, pull lid toward you until it's flat against inside of wall. To hold in place, set stick of scrap wood over hole on outside of wall and twist wire tightly over stick. Can lid should be held firmly against inside of wall.

Step 4: Use putty knife to apply premixed drywall patching compound over patch following manufacturer's instructions. (Don't use spackling compound because it shrinks as it dries.) You can also mix plaster of paris with water to make thick paste. Pack compound or plaster into hole against backing and behind stick. Keep compound inside hole, cover backing, and fill slits, but don't spread it on wall surface. Leave patch slightly low, and don't try to level it. Let patch dry until it turns bright white, typically at least 24 hours. When dry, cut string or wire and remove stick.

Step 5: To finish patch, fill it completely with more plaster of paris or drywall patching compound to make patch level with wall surface. Let dry, lightly sand area, prime, and paint.In the next section, we'll get more ambitious and find out how to fix a large drywall hole.

TEXT 2[2]

Her name was Connie. She was fifteen and she had a quick, nervous giggling habit of craning her neck to glance into mirrors or checking other people's faces to make sure her own was all right. Her mother, who noticed everything and knew everything and who hadn't much reason any longer to look at her own face, always scolded Connie about it. "Stop gawking at yourself. Who are you? You think you're so pretty?" she would say. Connie would raise her eyebrows at these familiar old complaints and look right through her mother, into a shadowy vision of herself as she was right at that moment: she knew she was pretty and that was everything. Her mother had been pretty once too, if you could believe those old snapshots in the album, but now her looks were gone and that was why she was always after Connie.

"Why don't you keep your room clean like your sister? How've you got your hair fixed—what the hell stinks? Hair spray? You don't see your sister using that junk."

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[1] Adapted from the text by Walter Curtis at http://home.howstuffworks.com/how-to-fix-holes-in-drywall.htm

[2] Extract from the short story "Where Are You Going, Where Have You Been?" by Joyce Carol Oates. Available at http://www.usfca.edu/jco/whereareyougoing/

Her sister June was twenty-four and still lived at home. She was a secretary in the high school Connie attended, and if that wasn't bad enough—with her in the same building—she was so plain and chunky and steady that Connie had to hear her praised all the time by her mother and her mother's sisters. June did this, June did that, she saved money and helped clean the house and cookedand Connie couldn't do a thing, her mind was all filled with trashy daydreams. Their father was away at work most of the time and when he came home he wanted supper and he read the newspaper at supper and after supper he went to bed. He didn't bother talking much to them, but around his bent head Connie's mother kept picking at her until Connie wished her mother was dead and she herself was dead and it was all over. "She makes me want to throw up sometimes," she complained to her friends. [...]

TEXT 3[3]

Article 9 D

1. The Commission shall promote the general interest of the Union and take appropriate initiatives to that end. It shall ensure the application of the Treaties, and of measures adopted by the institutions pursuant to them. It shall oversee the application of Union law under the control of the Court of Justice of the European Union. It shall execute the budget and manage programmes. It shall exercise coordinating, executive and management functions, as laid down in the Treaties. With the exception of the common foreign and security policy, and other cases provided for in the Treaties, it shall ensure the Union's external representation. It shall initiate the Union's annual and multiannual programming with a view to achieving interinstitutional agreements.
2. Union legislative acts may only be adopted on the basis of a Commission proposal, except where the Treaties provide otherwise. Other acts shall be adopted on the basis of a Commission proposal where the Treaties so provide.
3. The Commission's term of office shall be five years. The members of the Commission shall be chosen on the ground of their general competence and European commitment from persons whose independence is beyond doubt. In carrying out its responsibilities, the Commission shall be completely independent. Without prejudice to Article 9 E(2), the members of the Commission shall neither seek nor take instructions from any Government or other institution, body, office or entity. They shall refrain from any action incompatible with their duties or the performance of their tasks.
4. The Commission appointed between the date of entry into force of the Treaty of Lisbon and 31 October 2014 shall consist of one national of each Member State, including its President and the High Representative of the Union for Foreign Affairs and Security Policy who shall be one of its Vice-Presidents.

[3] Extract from the Treaty on European Union - Title III: Provisions on the Institutions - Article 17at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri+CELEX:12008M017

TEXT 4[4]

12 dead at protest rally in Yemen

Twelve people were shot dead and dozens wounded on Saturday when security forces and plain-clothed government loyalists launched a coordinated attack opening fire on a mass rally in the Yemeni capital of Sana'a, calling for President Ali Abdullah Saleh's resignation.

The crackdown has dampened hopes for a negotiated political solution to the nine-month uprising and heightened fears that the impoverished country may be heading towards civil war.

In an effort to pile further pressure on their autocratic ruler, who recently returned from Saudi Arabia after receiving treatment for injuries sustained in an assassination attempt, protesters launched an escalation campaign, calling for a mass demonstration on Saturday.

At midday, a crowd of 100,000 men, women and children stormed out of the tented protest encampment, dubbed Change Square, and into the city. As they marched deeper into the dusty streets of Sana'a, a volley of bullets fired by snipers stationed in nearby buildings rained down on the crowd. As the shooting intensified, young men appeared on battered motorbikes and began ferrying the wounded away from the fighting.

A few blocks away, soldiers could be seen distributing steel batons to mobs of plain-clothed government loyalists who closed in and began hurling rocks at the demonstrators.

But the violence seemed only to embolden the protesters, who pressed on and marched into the heart of the city. Young men ripped open their shirts, bearing their chests at the security forces, as the crowd roared: "Oh Ali Saleh, the courts are waiting for you."

Blood trickled down the walls of a nearby mosque-turned-field-hospital in Change Square where a group of doctors and medical students struggled to find the floor-space, let alone the medical supplies, for the dozens of wounded being brought in. Mohammed Al-Qubati, a doctor working in a field hospital, told the Observer that people were dying because of a "shortage of medical supplies".

[4] Extract from the text at http://www.theguardian.com/world/2011/oct/15/yemen-government-loyalists-kill-12

Lexicool Analyses

TEXT 1

Total word count :	326
Number of different words :	161
Complexity factor (Lexical Density) :	49.4%
Readability (Gunning-Fog Index) : *(6-easy 20-hard)*	5.3
Total number of characters :	1796
Number of characters without spaces :	1417
Average Syllables per Word :	1.5
Sentence count :	28
Average sentence length (words) :	11.64
Max sentence length (words) :	23
(fixing a small drywall hole in this article we ll tell you how to fix both a small and a large drywall hole)	
Min sentence length (words) :	1
(step 1)	
Readability (Alternative) beta : *(100-easy 20-hard, optimal 60-70)*	68.1

TEXT 2

Total word count :	352
Number of different words :	183
Complexity factor (Lexical Density) :	52%
Readability (Gunning-Fog Index) : *(6-easy 20-hard)*	7.7
Total number of characters :	1868
Number of characters without spaces :	1463
Average Syllables per Word :	1.41
Sentence count :	22
Average sentence length (words) :	17.75
Max sentence length (words) :	49
(she was a secretary in the high school connie attended and if that wasn t bad enough—with her in the same building—she was so plain and chunky and steady that connie had to hear her praised all the time by her mother and her mother s sisters)	
Min sentence length (words) :	2
(hair spray)	
Readability (Alternative) beta : *(100-easy 20-hard, optimal 60-70)*	69.5

TEXT 3

Total word count :	297
Number of different words :	148
Complexity factor (Lexical Density) :	49.8%
Readability (Gunning-Fog Index) : *(6-easy 20-hard)*	11.1
Total number of characters :	1892
Number of characters without spaces :	1556
Average Syllables per Word :	1.88
Sentence count :	19
Average sentence length (words) :	18.56
Max sentence length (words) :	50
(the commission appointed between the date of entry into force of the treaty of lisbon and 31 october 2014 shall consist of one national of each member state including its president and the high representative of the union for foreign affairs and security policy who shall be one of its vice presidents)	
Min sentence length (words) :	2
(article 9 d 1)	
Readability (Alternative) beta : *(100-easy 20-hard, optimal 60-70)*	28.9

TEXT 4

Total word count :	325
Number of different words :	191
Complexity factor (Lexical Density) :	58.8%
Readability (Gunning-Fog Index) : *(6-easy 20-hard)*	12.8
Total number of characters :	2029
Number of characters without spaces :	1642
Average Syllables per Word :	1.75
Sentence count :	12
Average sentence length (words) :	27.08
Max sentence length (words) :	49
(12 dead at protest rally in yemen twelve people were shot dead and dozens wounded on saturday when security forces and plain clothed government loyalists launched a coordinated attack opening fire on a mass rally in the yemeni capital of sana a calling for president ali abdullah saleh s resignation)	
Min sentence length (words) :	9
(oh ali saleh the courts are waiting for you)	
Readability (Alternative) beta : *(100-easy 20-hard, optimal 60-70)*	31.2