

Can you trust a TM? Results of an experiment conducted in November 2015 and August 2016 with students and professional translators.

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Abstract

This paper describes an experiment conducted by the author in November 2015 with 69 MSc Translation students at CenTraS @ UCL (covering 14 target languages) and in August 2016 with 30 professional translators in Saudi Arabia (covering English to Arabic). The experiment was inspired by Lynne Bowker's pilot study **Productivity vs Quality? A pilot study on the impact of translation memory systems** (published in *Localisation Focus* in March 2005). The author of this paper wanted to find out whether translators who are fairly new to translation technology would "blindly" trust the content of a TM or whether they would still check the content thoroughly and make any necessary changes to the translation. Students and professional translators were asked to translate a short text consisting of 14 sentences and a total of 217 words in Wordfast Anywhere/SDL Trados Studio 2015. They also received a translation memory (TM) for their respective language combination. All TMs contained mistakes, which the author did not mention to the students and the professional translators. Interestingly, while the professional translators fared better at editing fuzzy matches than the students, they did not pick up on incorrect 100% matches as well as the student translators, tended to lack attention to detail by, for example, introducing double spaces into sentences, and not all professional translators translated the new sentences given for translation.

1 Introduction

Ever since the author came across Lynne Bowker's pilot study **Productivity vs Quality? A pilot study on the impact of translation memory systems** (published in *Localisation Focus* in March 2005), she wanted to conduct a similar experiment with her own students. This finally happened in November 2015, at the Centre for Translation Studies (CenTraS) at University College London (UCL).

Bowker had conducted an experiment with students of French and English in order to investigate the impact of translation memory (TM) tools on both the speed and the quality of the translation. She had divided her students into three groups and asked them to translate the same text. The first group was asked to translate the text without the use of a translation memory tool, while the second and third groups were asked to use a translation memory tool, together with a translation memory which Bowker had provided. The translation memory for the second group was of good quality whilst the translation memory for the third group contained mistakes which Bowker had not told the students about.

Bowker's first group translated the text relatively well but was slower than the second and the third groups, and while both the second and the third groups translated the text more quickly, the third group did not pick up on all the mistakes contained in the translation

memory, thereby producing a translation of a lower quality. Bowker's conclusion was that translators who use a translation memory tool may therefore not be critical enough of translations suggested by the translation memory, which in turn also means that proper training is required for using translation technology.

The author of this paper wanted to replicate the experiment which Bowker conducted with her third group, however, this time with a total of 14 target languages, with 69 MSc Translation students at CenTraS @ UCL, as well as 30 professional translators. The student translators had completed 12 contact hours (2 hours of face to face teaching per week in a lab at UCL over 6 weeks) by the time the experiment was conducted. By this time, students had been taught about the concept of a translation memory (4 contact hours) and had learned to use Wordfast Anywhere (WFA) (8 contact hours). The professional translators had completed a one day training course (7 hours) on the concept of a translation memory tool and on how to translate using SDL Trados Studio 2015.

The author's aim of the experiment was to find out whether relatively new users of translation memory tools would "blindly" trust the content of a translation memory and whether there were distinct differences in terms of thoroughness between students and professional translators and possibly also between different languages/nationalities.

2 Set up of the experiment

The chosen source language for the text to be translated as part of the experiment was English, and translations were to be provided into the mother tongue of the sample groups. Target languages covered by the students were Italian (5 students), Simplified Chinese (31 students), Traditional Chinese (2 students), Russian (3 students), Swedish (1 student), Japanese (3 students), Portuguese (1 student), Greek (1 student), German (3 students), French (2 students), Spanish (4 students), Norwegian (1 student), Polish (2 students), Arabic (1 student but she did not submit), and Korean (1 student). Native English students (of which there were very few; 2 for German and 1 for Spanish) were asked to translate out of English for this experiment. The student numbers above are for those who actually submitted their translation. The age range of the students was roughly between 22 and 40 years, with some students having just completed a Bachelor's degree and some other students having worked for a number of years already, either as translators or in another profession.

Before the experiment, the author had asked the students to fill in a short questionnaire, which 44 out of the 69 students did. 12 students indicated that they had prior knowledge of translation memory tools, ranging from 2 days to 10 years. Tools mentioned were Trados in first place, followed by memoQ, Wordfast, Deja Vu, and OmegaT. The majority of the students who indicated prior knowledge originated from a European country (Italy, Sweden, Germany, UK, Spain, Norway, Portugal). Only 2 students from mainland China indicated that they had used a translation memory tool before (in both cases Trados, for only a couple of days). The other students had not heard of/not used a TM tool before coming to UCL.

The same experiment was then conducted with 30 professional translators (20 men and 10 women) in Saudi Arabia who had only learned to use a translation memory the day before the experiment was conducted.

The professional translators worked in pairs which resulted in a total of 15 translations for the author to analyse. The age range of the professional translators was roughly between 22 and 55 years, with the youngest professionals having just completed university and the oldest ones having worked as translators for up to 30 years already, however not with translation memory tools.

Students and professional translators were given a short text consisting of 14 sentences and a total of 217 words about the difference between Office 365 subscription plans and Office as a one-time purchase (which the author had copied from a website into a Word document), as

well as a translation memory (TM) for their respective language combination (which the author had previously created from the original text as well as the existing translation on a website and then prepared for the experiment, see 2.1).

For the experiment, student translators were asked to translate the short text together with the respective TM for their language combination using Wordfast Anywhere (WFA) in class. Detailed instructions were given out to the students on how to set up WFA for the experiment.

A similar approach was used for the professional translators, however, they received a project package for translation in SDL Trados Studio 2015 and were told that this was a revision exercise, rather than an experiment.

Students translated the text using WFA and submitted their updated TM as well as their bilingual file on Moodle, the virtual learning environment used at UCL. Professional translators opened the project package in SDL Trados Studio 2015, translated the file in SDL Trados Studio 2015 and then created a return package which they saved on their desktops. The author then collected the files from each desktop.

Neither the students nor the professional translators were given a time frame in which they had to complete the translation.

2.1 How the text for translation was prepared

The author decided to use a source text from the Microsoft website since it was possible to obtain translations of the source text into all the 14 languages required for the experiment. The source text is shown below, copied into a Word document.

What's the difference between Office 365 subscription plans and Office as a one-time purchase?

With Office 365 subscription plans you get the full, installed Office applications: Word, Excel, PowerPoint, OneNote, Outlook, Publisher, and Access (Publisher and Access are available on PC only.) You can install Office 365 across multiple devices, including PCs, Macs, Android tablets, Android phones, iPad, and iPhone. In addition, with Office 365 you get services like online storage with OneDrive and Skype minutes for home use. When you have an active Office 365 subscription, you always have the most up-to-date version of the Office applications.

Office as a one-time purchase includes applications such as Word, Excel, and PowerPoint for use on a single PC or Mac. The applications are not automatically updated. Office application versions available for one-time purchase are Office 2016 for Windows and Mac. Previous versions include Office 2013, Office 2011 for Mac, Office 2010, Office 2007, Office 2008 for Mac, and Office 2004 for Mac. Office 2010 and Office 2007 are compatible with Windows 8.1 and earlier. Office as a one-time purchase does not include any of the services included in Office 365.

<https://products.office.com/EN/microsoft-office-for-home-and-school-faq?omkt=en>

Figure 1. The source text, as copied from the Microsoft website into a Word document.

The author then copied all the required translations of this text from the Microsoft website into a second Word document.

DE

Worin besteht der Unterschied zwischen den Office 365-Abonnementplänen und Office als einmaliger Kauf?

Mit den Office 365-Abonnementplänen erhalten Sie vollständige, installierbare Office-Anwendungen: Word, Excel, PowerPoint, OneNote, Outlook, Publisher und Access (Publisher und Access sind nur für PCs verfügbar.) Sie können Office 365 auf mehreren Geräten wie PCs, Macs, Android-Tablets, Android-Smartphones, iPad und iPhone installieren. Darüber hinaus erhalten Sie mit Office 365 Dienste wie Onlinespeicher auf OneDrive und Skype-Gesprächsminuten für die private Nutzung. Mit einem aktiven Office 365-Abonnement verfügen Sie immer über die neuesten Versionen der Office-Anwendungen.

Office im Einzelkauf enthält Anwendungen wie Word, Excel und PowerPoint für die Nutzung auf einem einzelnen PC oder Mac. Die Anwendungen werden nicht automatisch aktualisiert. Die Office-Anwendungen, die für den Einzelkauf verfügbar sind, sind Office 2016 für Windows und Mac. Zu den älteren Versionen gehören Office 2013, Office 2011 für Mac, Office 2010, Office 2007, Office 2008 für Mac und Office 2004 für Mac. Office 2010 und Office 2007 sind mit Windows 8.1 und älteren Versionen kompatibel. Office im Einzelkauf enthält keinen der Dienste, die in Office 365 enthalten sind.

ES

¿Cuál es la diferencia entre los planes de suscripción de Office 365 y Office como compra única?

Con la suscripción a planes de Office 365 obtendrás las siguientes aplicaciones de Office completas e instaladas: Word, Excel, PowerPoint, OneNote, Outlook, Publisher y Access (Publisher y Access solo están disponibles para PC). Puedes instalar Office 365 en múltiples dispositivos, incluidos PC, Mac, tabletas y teléfonos Android, iPad y iPhone. Además, con Office 365 obtienes servicios como almacenamiento en línea con OneDrive y minutos de Skype para usar en el hogar. Si tienes una suscripción activa a Office 365, siempre dispones de las versiones más recientes de las aplicaciones de Office.

Figure 2. All translations required for the experiment were copied from the Microsoft website into a second Word document.

As the author wanted to introduce mistakes in the translation memory without making these mistakes obvious in each of the target languages, the author then modified the original English text (rather than modifying each of the 14 translations) by changing some formatting, adding and deleting words as well as sentences in the English source text. In the last paragraph, for example, “are not automatically updated” was changed to “are automatically updated” in the source text. A number of further small changes were introduced, with an attempt to prevent them being obvious.

What's the difference between Office 365 subscription plans and Office as a one-time purchase?

With Office 365 subscription plans you get the full, installed Office applications: Word, Excel, PowerPoint, OneNote, Outlook, and Access (Publisher and Access are available on PC only.) You can install Office 365 across multiple devices, including PCs, Macs, Android tablets, Android phones, iPad, and iPhone. In addition, with Office 365 you get services like online storage with OneDrive and Skype minutes for office use. When you have an active Office 365 subscription, you always have the most up-to-date version of the Office applications.

Office as a one-time purchase includes applications such as Word, Excel, and PowerPoint for use on a single PC or Mac. The applications **are automatically updated.** Office application versions available for one-time purchase are Office 2016 for Windows and Mac. Previous versions include Office 2013, Office 2011 for Mac, Office 2010, Office 2007, Office 2008 for Mac, and Office 2004 for Mac, Office 2010 and Office 2007 **are compatible with** Windows 8.1 and earlier. Office as a one-time purchase does not include any of the services included in Office 365.

Figure 3. The modified English source text. Example: In the last paragraph, line 2, “are not automatically updated” was changed to “are automatically updated”, however, the translations still read “are not automatically updated”.

The author then created 14 translation memories, using the modified English source text and the unchanged translation as taken from the Microsoft website which had been copied into a Word document. The purpose of this was to create “false” 100% matches, as shown in the

example below. Each translation memory was then exported as a tmx (translation memory exchange) file.

```
<tu creationdate="20151120T141818Z" creationid="GJUGuV" usagecount="0">
  <prop type="x-attribute1">1=&</prop>
  <tuv xml:lang="EN-US">
    <seg>The applications are automatically updated.</seg>
  </tuv>
  <tuv xml:lang="DE-DE">
    <seg>Die Anwendungen werden nicht automatisch aktualisiert.</seg>
  </tuv>
</tu>

<tu creationdate="20151120T141731Z" creationid="GJUGuV" usagecount="0">
  <prop type="x-attribute1">1=&</prop>
  <tuv xml:lang="EN-US">
    <seg>You can install Office 365 across multiple devices, including PCs, Macs, Android tablets, Android phones, iPad, and iPhone.</seg>
  </tuv>
  <tuv xml:lang="DE-DE">
    <seg>Sie können Office 365 auf mehreren Geräten wie PCs, Macs, Android-Tablets, Android-Smartphones, iPad und iPhone installieren.</seg>
  </tuv>
</tu>

<tu creationdate="20151120T141709Z" creationid="GJUGuV" usagecount="0">
  <prop type="x-attribute1">1=&</prop>
  <tuv xml:lang="EN-US">
    <seg>Word, Excel, PowerPoint, OneNote, Outlook, and Access (Publisher and Access are available on PC only.)</seg>
  </tuv>
  <tuv xml:lang="DE-DE">
    <seg>Word, Excel, PowerPoint, OneNote, Outlook, Publisher und Access (Publisher und Access sind nur für PCs verfügbar.)</seg>
  </tuv>
</tu>
```

Figure 4. tmx for EN-US to DE-DE which includes “false” 100% matches.

In the final step, the author made the following changes to the source text (shown below using track changes for illustrative purposes only). This file was then given to the students/professional translators for translation. The aim was to create 100% matches, fuzzy matches and no matches which the students and professional translators would have to work on.

The students downloaded the Word document for translation and their respective tmx file from Moodle, while the professional translators received the text for translation and the translation memory as a project package for SDL Trados Studio 2015.

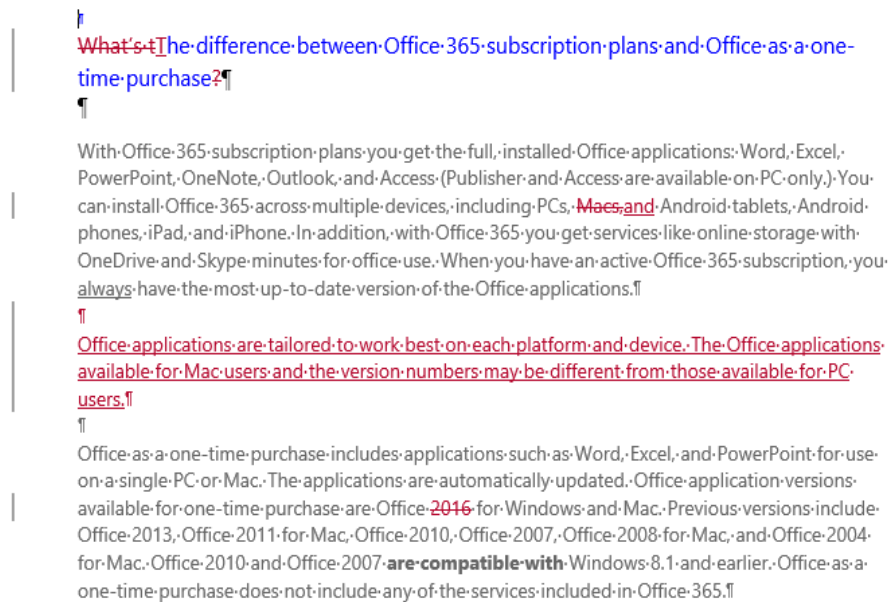


Figure 5. The file for translation, shown with track changes. All track changes were accepted before the file was given to the students and the professional translators.

2.2 What the students and professional translators were expected to do with the text for translation

The following table shows the 14 sentences as well as what the author expected the students and professional translators to do with them. The actual word count for new translations was very low (only sentences 7 and 8 had to be translated from scratch); all other sentences were either correct or incorrect 100% matches or fuzzy matches which had to be edited. This table was obviously not provided to the test subjects.

#	The text as given to student/professional translators	What the student/professional translators should have done when they translated the text:
1	The difference between Office 365 subscription plans and Office as a one-time purchase	Fuzzy match: Should have changed the translation from the TM (which was a question) to match the sentence shown on the left (i.e. delete the word "What's" as well as the question mark at the end).
2	With Office 365 subscription plans you get the full, installed Office applications:	100% match: Should have kept what the TM provided.
3	Word, Excel, PowerPoint, OneNote, Outlook, and Access (Publisher and Access are available on PC only.)	100% match from the TM but I had inserted a mistake: Should have deleted the word "Publisher" from the translation: the translation should have read ... Outlook, and Access INSTEAD of Outlook, Publisher, and Access .
4	You can install Office 365 across multiple devices, including PCs, and Android tablets, Android phones, iPad, and iPhone.	Fuzzy match: Should have changed the translation from the TM and deleted "Macs" and added the word "and": the translation should have read ... including PCs, and Android tablets INSTEAD of ... including PCs, Macs, and Android tablets .
5	In addition, with Office 365 you get services like online storage with OneDrive and Skype minutes for office use.	Incorrect 100% match from the TM: Should have changed "home use" to "office use" in the translation.
6	When you have an active Office 365 subscription, you <u>always</u> have the most up-to-date version of the Office applications.	Incorrect 100% match from the TM: Should have underlined the word for "always" in the translation.
7	Office applications are tailored to work best on each platform and device.	This was a new sentence for translation which had to be translated from scratch.
8	The Office applications available for Mac users and the version numbers may be different from those available for PC users.	This was a new sentence for translation which had to be translated from scratch.
9	Office as a one-time purchase includes applications such as Word, Excel, and PowerPoint for use on a single PC or Mac.	100% match: Should have kept what the TM provided.
10	The applications are automatically updated.	Incorrect 100% match from the TM: Should have deleted the word "not" (are not automatically updated -> are automatically updated) in the translation.
11	Office application versions available for one-time purchase are Office for Windows and Mac.	Fuzzy match: Should have deleted "2016" (Office 2016 -> Office) in the translation.
12	Previous versions include Office 2013, Office 2011 for Mac, Office 2010, Office 2007, Office 2008 for Mac, and Office 2004 for Mac.	100% match: Should have kept what the TM provided.
13	Office 2010 and Office 2007 are compatible with Windows 8.1 and earlier.	Incorrect 100% match from the TM: Should have made "are compatible with" bold in the translation.
14	Office as a one-time purchase does not include any of the services included in Office 365.	100% match: Should have kept what the TM provided.

Figure 6. The file for translation, and what students and professional translators should have done.

3 Evaluation of the results

3.1 Submitted translations and time spent

Of the 69 student translators who completed the experiment in class, not all students submitted their files and some students submitted wrong files. Two students were from Taiwan and had worked with the tmx for Mainland China thereby mixing simplified with traditional Chinese characters (they had not mentioned at the start of the course that they were from Taiwan which is why the author had not provided a TM with Traditional Chinese for this experiment). All in all, the valid sample for analysis consisted of 60 student translations.

All professional translators (English into Arabic) submitted the correct file, however, this was as expected, as they had no other files which they could have submitted, and the author collected the files directly from their desktops. In terms of time, both students and professional translators spent between 20 and 50 minutes to complete the experiment. It was

also interesting to see how some student translators revisited/checked their work once they had completed the files, something which the professional translators did not do.

In order to complete the experiment, the students had to download the file for translation and the tmx from Moodle, log on to WFA, create an empty TM and import the tmx file into this newly created TM, open the file for translation in WFA, translate it together with the TM, download both the translated bilingual file as well as the tmx from WFA and submit it on Moodle. The professional translators only had to open the project package in SDL Trados Studio 2015, translate the file and create a return package which they saved on their desktops.

3.2 Evaluation of the results: 100% matches which should not have been changed

The text contained 4 sentences (# 2, 9, 12 and 14) for which correct 100% matches had been provided in the TM, and these sentences should have therefore been kept unchanged.

Of the student translators, 72% kept the existing translation and 28% changed it. Those who changed the translation generally improved it, e.g. by using a better wording.

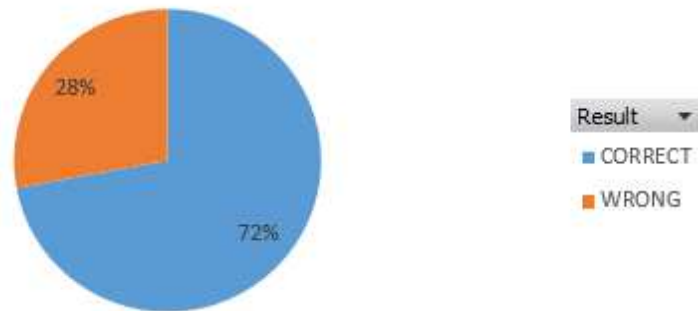


Figure 7. 72% of the student translators left sentences 2, 9, 12 and 14 unchanged.

An analysis of the largest student group (Simplified Chinese: 31) reveals the following:

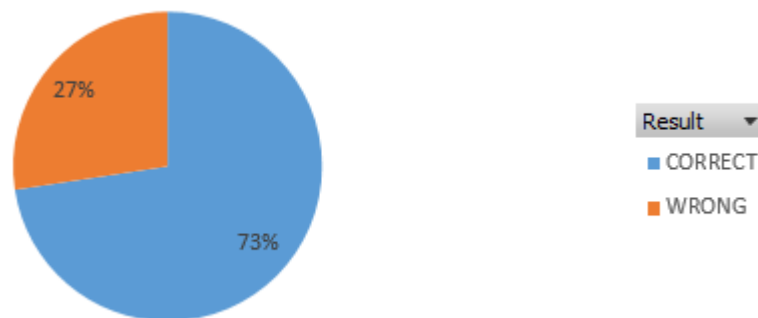


Figure 8. 73% of the Simplified Chinese student translators left sentences 2, 9, 12 and 14 unchanged.

Although the sample group for the Germanic languages (German, Norwegian, Swedish) was small, the result was as follows:

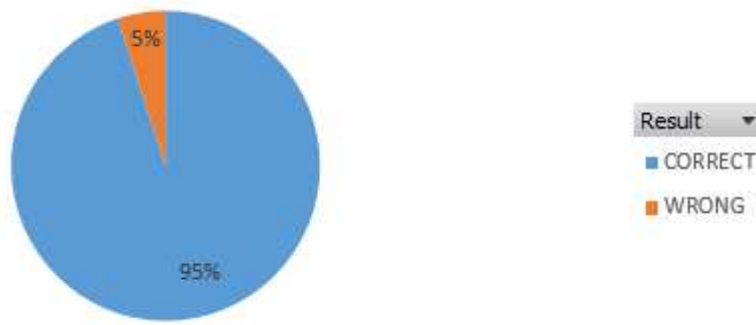


Figure 9. 95% of the Germanic student translators left sentences 2, 9, 12 and 14 unchanged.

The result for the Romance languages (French, Italian, Spanish, Portuguese) was as follows:

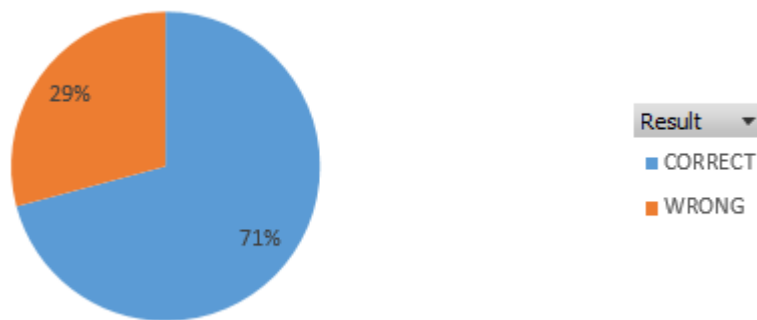


Figure 10. 71% of the Romance student translators left sentences 2, 9, 12 and 14 unchanged.

Of the professional translators, 97% left sentences 2, 9, 12 and 14 unchanged; the 3% who changed the translation said that the original translation was not good.

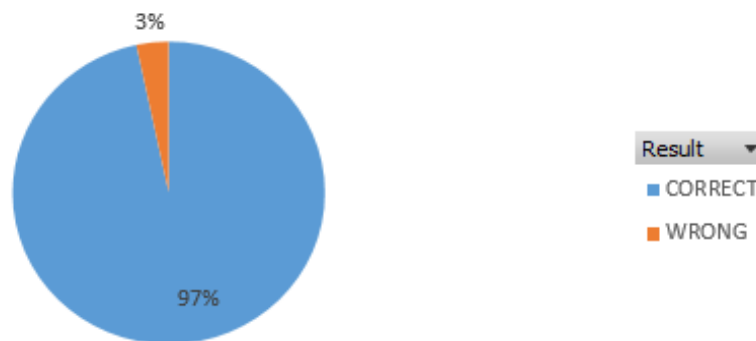


Figure 11. 97% of the professional translators left sentences 2, 9, 12 and 14 unchanged.

There are a number of possible interpretations for this result: The student translators may have been more thorough or more inexperienced and therefore changed a perfectly good translation. The professional translators were from Saudi Arabia and the Arabic provided to them was in a different Arabic dialect, or the professional translators simply did not consider it important to really look at the translation critically. A comment which the author kept hearing from the professionals was: “We are only in training and you will delete the files

anyway so it doesn't matter whether we do a good job or not – this training is only about the process of learning how to work with the tool, not about producing a nice translation”.

3.3 Evaluation of the results: Sentences which had to be translated from scratch

For sentences 7 and 8 (shown below as segments 8 and 9), no translation was provided so these sentences had to be translated from scratch. Interestingly, all student translators translated these two sentences but of the 15 professional translator teams, 3 teams (all men) left these sentences untranslated.

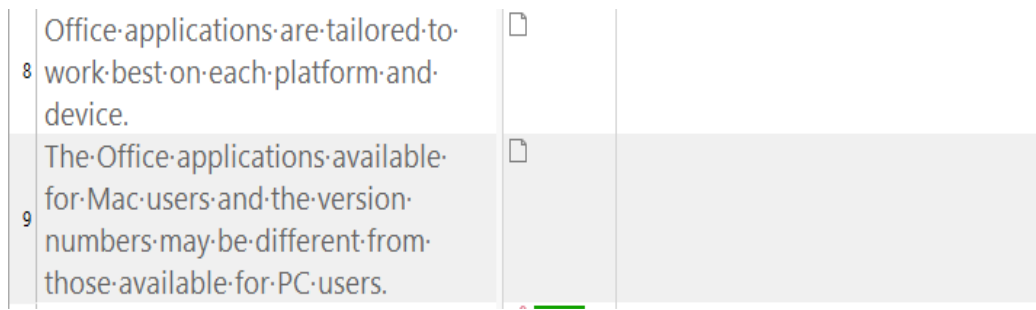


Figure 12. New segments left empty.

3.4 Evaluation of the results: Sentences which were 100% matches but contained mistakes

Sentences 3, 5, 6, 10 and 13 were provided as 100% matches but actually contained mistakes which had been introduced by the author. The author wanted to find out whether the students/professional translators checked 100% matches carefully or whether they “blindly” trusted the TM and accepted these matches with the mistakes.

60% of the student translators spotted the mistakes in these 100% matches and corrected them, whereas 40% “blindly” accepted the incorrect 100% matches.

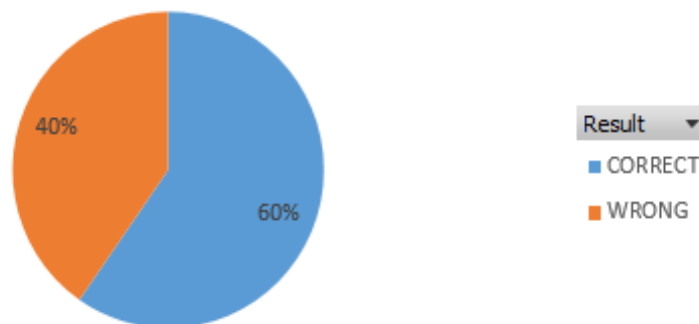


Figure 13. 60% of the student translators spotted the mistakes in the incorrect 100% matches.

As for the professional translators, the result is quite staggering and the opposite to the students' result: Only 40% spotted the mistakes in the incorrect 100% matches.

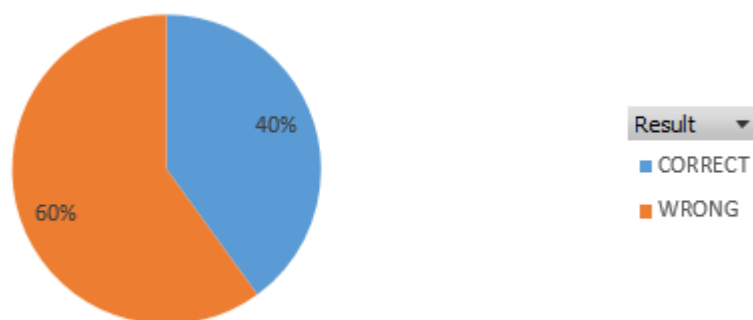


Figure 14. Only 40% of the professional translators spotted the mistakes in the incorrect 100% matches.

This is quite a surprising result, and again, several interpretations are possible. Upon querying this with some of the professional translators, the author was told that “we spotted the difference but didn’t change it”. Whether this is true or simply a way of saving face and not admitting that this was missed is not clear.

3.5 Evaluation of the results: Fuzzy matches which should have been edited

Sentences 1, 4 and 11 were fuzzy matches which should have been edited. The author had deliberately introduced very small changes in these sentences so as to not make the changes too obvious.

The result of the student translators was interesting and maybe the most surprising result as only 53% of the students spotted the differences (which were shown in the Translation Memory window and should therefore have been obvious) and changed the translation whereas 47% did not change the translation and thereby ended up with a wrong translation.

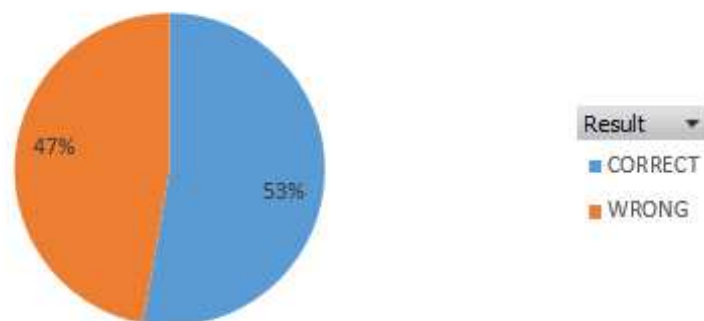


Figure 15. Only 53% of the student translators corrected the fuzzy matches.

The professional translators fared better: 76% edited the fuzzy matches correctly.

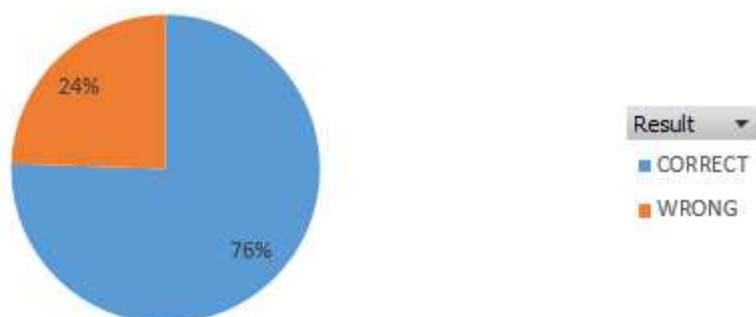


Figure 16. 76% of the professional translators corrected the fuzzy matches.

3.6 Evaluation of the results: Other aspects

Other aspects which the author noticed in the translations submitted by the professional translators – mistakes which the student translators did not make – was a lack of attention to detail, mainly too many spaces within a sentence or underlining a space where only a word should have been underlined.

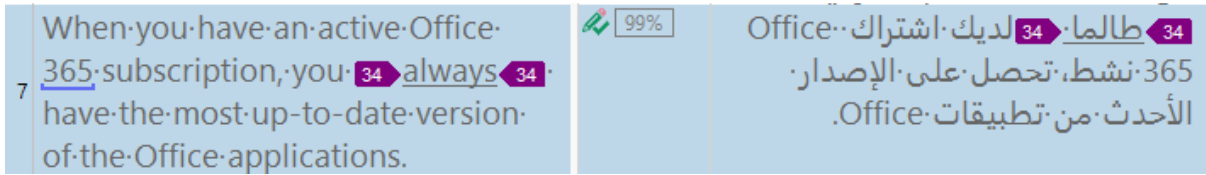


Figure 17. Too many spaces within the Arabic sentence (shown by two dots) and the underline goes over the space.

Several professional translators also had not confirmed segments, as shown below for segment 12. This is something which the student translators got right. One reason for this could be that the student translators worked with WFA which forces you to confirm and jump to the next segment, whereas in SDL Trados Studio 2015 it is possible to simply jump to another segment without first confirming it.

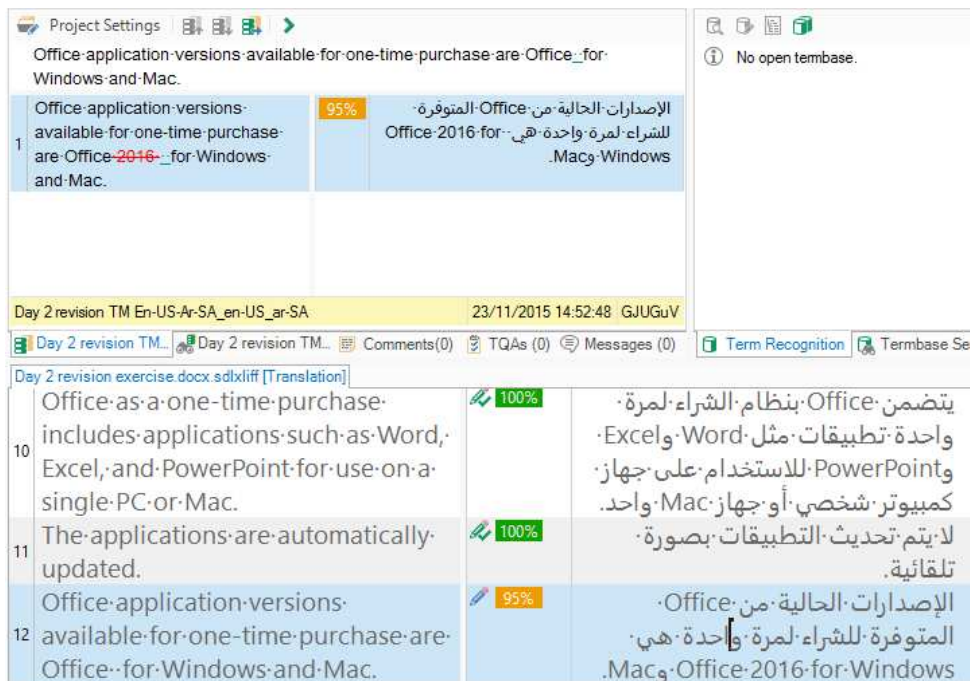


Figure 18. Segment 12 is unconfirmed and unedited.

There were also formatting issues in some of the professional translators' files, something which the student translators got right.

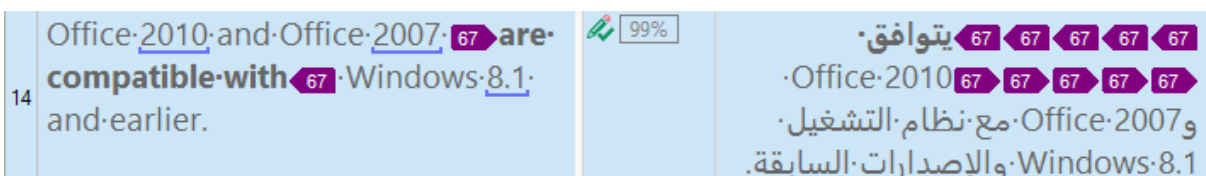


Figure 19. Too many formatting tags in the Arabic.

4 Conclusion and further research

The author is very glad that she has conducted this experiment as it has provided some interesting insights. It was interesting to see that while professional translators fared better at editing fuzzy matches than the student translators, they did not pick up on incorrect 100% matches as well as the student translators, tended to lack attention to detail by for example introducing double spaces into sentences, and not all professional translators translated the new sentences given for translation. The sample was small and therefore statistically insignificant, with Chinese and Arabic being the largest language groups in this experiment, however, the author believes that trends can be deduced from this experiment. It would be interesting to repeat this experiment with larger sample groups, other professional translators and undergraduate students who would be younger and be less likely to have been exposed to real translation work already.

Acknowledgements

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References

- Bowker, Lynne. Productivity vs Quality? A pilot study on the impact of translation memory systems. In *Localisation Focus* (March 2005).
https://www.localisation.ie/sites/default/files/publications/Vol4_1Bowker.pdf (last accessed: 7 October 2016)
- Microsoft. What's the difference between Office 365 subscription plans and Office as a one-time purchase?
<https://products.office.com/EN/microsoft-office-for-home-and-school-faq?omkt=en> (last accessed: 7 October 2016)