Machine translation as a tool for language learning

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Abstract

The few studies on MT as a language learning tool focus on its use by advanced learners, never by beginners. Yet, freely available MT engines (i.e. Google Translate) and MT-related web initiatives (i.e. Gabble-on.com) position themselves to cater precisely for the needs of learners with limited command of the L2, while anecdotal classroom evidence points to beginners availing themselves of MT help even against the advice of teachers. In order to find out whether MT could help developing their writing skills into L2 we've run some tests asking participants to write directly into L2 and first into L1, then pre-editing the L1 and post-editing the L2 within the MT’s Tradukka.com interface.

Project details

In order to find out whether MT might be a suitable activity for developing writing skills into L2 we did in the first semester of 2010 some tests involving as participants students of Spanish. A first group, beginners, would have had some 40 hours of formal tuition; the second, early intermediate level, some 160. We aimed at finding whether students would communicate better and learn more if writing directly into Spanish or with the help of an MT draft.

The tests were carried out as email communication with participants given fifteen minutes to respond to some prompts, and requested to submit some 50 words at Level 1 and some 100 at Level 2. The prompts were drafted at the same notional difficulty. By looking at the output produced by participants (writing as a product), we wanted to know whether students writing with the help of an MT draft (the experimental group) would be able to communicate better than writing directly into the L2. This was a repeated measures design, since participants would at some stage work both directly into L2 and with MT.

The participants answered one of the prompts directly into L2, the other first into English using the MT Tradukka interface (www.tradukka.com), and encouraged to pre-edit and post-edit in the as required. The tests were screen recorded (using BB FashBack Pro 2.7.3).

The data analysis was conducted in two stages. First, by looking at writing “as a product”, to help us check whether students communicated better from the MT baseline, taking the number of words as an indicator of amount of communication, and the results of blind marking as an indicator of quality of communication. Then, by looking at writing “as a process”, while considering pauses in the screen recordings as indicators of effort and editing interventions as indicators of engagement with the task.

Detailed results

Nine participants sat the tests at Level 1 and seven at Level 2. The sample is too small for us to confer any statistical value to it, but it is often the case that bigger, more representative samples are hard to reach within classroom based research.
**Number of words.** For level 1 all participants write a higher number of words with MT that they do when working directly into L2, with the exception of one participant who produces an equal number of words in both. This is also the case at Level 2, with the exception of one participant who actually writes more words into L2. For Level 1 the total number of words is noticeable higher when helped by MT. It is also higher for Level 2, but not in the same proportion.

This data suggests that MT helps learners to communicate more, probably in a way which is inversely proportional to their actual mastery of the language: the lower the mastery the greater the help provided by the MT draft.

**Quality of output.** The writing samples were sent to two markers for blind marking. For Level 1 and according to the first marker 6/9 participants get a better mark by helping themselves with MT, xx/9 for Marker 2. Total marks awarded to the MT mediated passages as well as the averages still favour the passages with MT. For Level 2, and from Marker 1, 4/7 get a better mark helped by MT, and 5/7 from marker 2, even though, in the case of Marker 2, the total mark given to into L2 passages is slightly higher.

The data seems to indicate, thus, that quality wise there are some advantages to be gained with MT help, although those are not as noticeable as they were when we considered the number of words. Again, it seems the less command of the language the participant has, the greater the advantage of using the Tradukka interface.

**Pauses as indicators of effort.** We considered as pauses interruptions in the flow of typing of over three seconds. We were interested in knowing how many times in each test the flow of typing was broken. The more the instances, we assumed, the greater the effort.

Interventions as indicators of engagement with the task.

The data from these experiments have already been written up and submitted for publication.