

The efficiency and effectiveness of the MT-assisted L2 writing process

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Over the past decade, the quality of machine translation (MT) output has improved significantly (Van Brussel et al., 2018). As a result, tools such as Google Translate and DeepL have become wildly popular among second language (L2) learners. For example, MT tools are commonly used by L2 learners to support their writing process (Alm and Watanabe, 2021). However, it is yet to be investigated how efficient and effective the MT-assisted writing process actually is, compared to support from more traditional tools such as online bilingual dictionaries. An efficient writing process is a fluent one, with as little cognitive load as possible. An effective writing process is one that generates a writing product of high quality. Moreover, little is known about how the L2 proficiency level of learners affects the process's efficiency and/or effectiveness. To address this gap, the first research objective of this study focuses on how MT access during writing compares to writing with access to a more traditional tool:

1. Does L2 learners' use of MT tools during the writing process differ from how they use dictionaries?
2. Does MT use affect learners' writing process differently than dictionary use? Does it result in a more efficient and/or effective writing process?
3. Do these differences in efficiency and effectiveness differ across L2 proficiency levels?

The second research objective will zoom in on the variation in L2 learners' use of MT during writing. Our aim is to find out which MT use patterns result in the most efficient and/or effective writing processes for learners at different L2 proficiency levels. Hence, we will be addressing the following questions:

1. To what extent does MT use vary during the writing process? Does this differ across L2 proficiency levels?
2. How do various MT use-related process indicators (e.g., mean consultation duration, total number of words looked up) and MT use patterns (combinations of process indicators) affect the process's efficiency and/or effectiveness? Does this differ across L2 proficiency levels?

Data will be gathered by means of collecting both process and product data from L1 Dutch learners of Swedish (n = 60). They will complete a number of writing tasks, of which two with access to an MT tool and two with access to an online bilingual dictionary. The writing process data will consist of keystroke logs, screen recordings, eye-tracking data, and stimulated recall interviews. In addition, data on the L2 proficiency level of the participants will be collected by means of a placement test and self-assessments.