

TEACHING UNDERGRADUATES TO EDIT HUMAN-AIDED MACHINE TRANSLATIONS

Abstract. The article discusses the machine translation system “Google translate”, which is actively used by students and undergraduates when working on the special professionally-oriented texts translation. It is concluded when working with this type of texts, you can use machine translation, which helps to save time and optimize the translation process. However, post-editing is a prerequisite for achieving high-quality translations made using Google translate. Based on the analysis of machine translation inaccuracies and errors, a possible three-stage post-editing scheme is proposed.

Key words: undergraduate students, teaching aid, human-assisted machine translation, ambiguity clarification, three-step editing process.

It is not a secret that undergraduates (especially “hard science” undergraduates) often use free web-based MT applications during the process of special texts translation to facilitate their work. It also makes their work less time-consuming. However, the effectiveness of HAMT (Human-Aided Machine Translation) use depends not only on the technical parameters of any MT system, but also assumes that the users are bilingual, or at least competent in two languages, because HAMT use implies revision of the source text and the output “in the light of errors” made by the software.

Machine translation (MT) has been in development since the 1950s and it can be defined as the use of computer applications to automatically translate texts from one natural language into another. Currently MT systems are envisioned to facilitate the translator’s work, in terms of efficiency and performance. Talking about MT for language teaching and learning purposes, the use of HAMT as a pedagogical tool for teaching is widespread today.

We suggest the use of HAMT as a pedagogical tool for teaching undergraduates to edit machine-translated abstracts by a free web-based MT application Google Translate.

Before designing teaching procedures we investigated the error patterns made by a free web-based MT application Google Translate. 20 abstracts from special purpose texts in the field of physics, biology, mathematics, technology were studied and their analysis helped us to identify the major difficulties encountered by undergraduates.

Having analysed mentioned above abstracts we managed to identify the following obstacles: mistranslation of prepositions, incorrect translation of complex word combinations such as “noun + noun + noun”, incorrect sentence structure with passive verbs (the predicate is often absent entirely), incorrect structure of complex sentences (the predicate is often absent or used incorrectly).

An example of the analyzed abstract from the field of technology is given in Table 1.

On the basis of the obtained data a short training course on MT editing is suggested, the main objectives of which are the following:

- (1) to introduce undergraduates to editing stages of machine-translated abstracts;
- (2) to revise grammatical, lexical and syntactical features of English at undergraduates' level;
- (3) to practice reading comprehension, text production and translation skills into the target language;
- (4) to improve error correction, critical thinking and self-evaluation.

Table 1

Source text in Russian	MT output	Target text in English
Наномодифицированный мелкозернистый бетон протестирован методом сканирующей микроскопии, который показывает, что процесс формирования его структуры происходит не только в результате армирования, но и роста кристаллогидратов, центрами которых являются частицы УНМ «Таунит».	Nanomodified fine concrete tested by scanning microscopy, which shows that the process of forming its structure is not only a result of the reinforcement, but also the growth of crystalline, the centers of which are particles CNM "Taunit".	Nanomodified fine concrete was tested by scanning electron microscopy, which showed that the process of forming a concrete structure is caused both by its reinforcement, and the growth of crystalline hydrates, the centers of which are CNM "Taunit" particles.

In the traditional view of Machine Translation (MT) the process of editing machine-translated texts can be presented as a three-phase process: pre-editing the source text, “interactive translation” and post-editing the machine output.

Table 2

<i>Pre-editing the source text</i>	<i>Preparing the source text for the machine: ensuring somehow that the vocabulary and structures in the text are within the capabilities of the MT system, and changing them if they are not.</i>
<i>“Interactive translation”</i>	<i>The system suspends its processing to ask the user for clarification of an ambiguity in the source text, or for a decision regarding a possible choice for the target text.</i>
<i>Post-editing the machine output</i>	<i>The overall process involves the revision of the output from the MT system. Post-editing can be “interactive” too (MT system can “help” the post-editor by drawing attention to potential errors).</i>

As we can see human intervention in the machine translation process is expected at three points: *before, during, and after the process*. It is also worth noting that these three phases are quite separate and happen in sequence.

In accordance with the set objectives and the aforementioned three-phase editing process a model of teaching postgraduates to edit machine-translated abstracts can be presented as a three-stage model.

Table 3

<i>The first stage</i>	studying differences between English and Russian academic styles causing inadequacy problems in editing; revising grammatical, lexical and syntactical features of academic English at undergraduates' level; major errors made by a free web-based MT application Google Translate; introducing undergraduates to three-phase editing process.
<i>The second stage</i>	- editing abstracts to research papers under teacher's supervision (pre-editing the source text, "interactive translation" and post editing the machine output)
<i>The third stage</i>	- independent editing abstracts to research papers (pre-editing the source text, "interactive translation" and post-editing the machine output)

The second and the third stages assume the use of such strategies as rewriting and paraphrasing, self-correction, guessing and inferencing, reflecting, use of synonyms and cognates or considering different alternatives for correction.

To summarize, the Human-Aided Machine Translation (HAMT) can be used as a pedagogical tool for teaching undergraduates to edit machine-translated abstracts of special purpose texts. Besides, for the teaching purposes it seems reasonable to teach undergraduates to edit machine-translated texts on the example of abstracts due to their small sizes and clear rhetorical and compositional structures.

We suggest a three-stage teaching model, which undoubtedly requires further elaboration in terms of content conceptualization and teaching techniques.

REFERENCES

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ҚЫТАЙ ТІЛІ МЕН ЭКОНОМИКАСЫ: ЕЛІМІЗ ЭКОНОМИКАСЫНДАҒЫ ЖАЛПЫ ӘСЕРІ

Түйіндеме. Қытай тілі мен экономикасы Еліміз экономикасындағы жалпы әсері күннен күнге артып келеді. Сол себепті елімізде қытай тілін үйренушілер