Cyber Learners' Use and Perceptions of Online Machine Translation Tools

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Abstract

The current study investigated cyber learners' use and perceptions of online machine translation (MT) tools. The results show that learners use several MT tools frequently and extensively for various second language learning (L2) purposes according to their needs. The learners' overall perceptions of using MT for English learning were generally positive. The learners reported several advantages of machine translation: ease of use, helpful feedback, effective revision, and facilitation of self-directed learning. At the same time, a considerable number of learners were aware of MT's drawbacks, such as awkward sentences, inaccurate grammar, and inappropriate words, and thus held a negative or skeptical view on the quality and accuracy of MT. These findings have important pedagogical implications for using MT in the context of a cyber university. For successful integration of MT in English classes, teachers need to provide appropriate guidelines and training that will help learners use MT effectively.

Keywords: Learners' Perceptions, Machine Translation, L2 Learning, Accuracy of Machine Translation

1. Introduction

Translation, which played an important role in facilitating L2 learning over the centuries, found itself devalued with the advent of language methodologies aimed at fostering communication skills. However, as a growing number of studies began to show that using first language (L1) had positive effects on L2 learning, the facilitative potential of translation has been reassessed in the field of L2 learning [1]. Furthermore, there are claims that translation is the "fifth skill" necessary to learn L2s, along with the four basic language skills: reading, writing, listening, and speaking [2].

With the revival of translation as a fifth skill, there has been a growing interest in using MT for L2 learning. MT is technology that generates translations of texts from one language to another by using computer algorithms. Today, Google Translate, a freely available online MT service, is the most popular example of this technology. Since the output of early MT was of low quality with many errors, its value as a language learning tool was severely limited. However, since 2016 when MT based on neural machine translation was developed, the output quality of MT has improved substantially. As a result, MT is now used by a considerable number of people, playing various positive roles as an educational tool that can effectively support L2 teaching and

learning [3]. Several studies show that L2 learners find MT beneficial from a linguistic, cognitive, and affective point of view [4].

Despite these positive research results, the translation quality of MT has still not yet reached perfection. According to research analysis of machine translation errors, awkward sentences with incorrect words and inaccurate grammar are still found in MT output, which may hinder the positive learning effect [5]. Therefore, in order to find the ways we can use MT to facilitate L2 learning, it is necessary to examine MT's potential drawbacks as well as benefits. In particular, as demand for MT for language learning is currently increasing, it is important to investigate learners' perceptions and attitudes toward using MT given that they are its primary users. The results of the study can provide useful insights for teachers as to how to effectively use MT in English education. So far, a growing number of studies on learners' use and perceptions of MT have been conducted in various educational settings, but few studies have been done on cyber learners in South Korea. Therefore, this study examines cyber learners' use and perceptions on the use of online MT for English learning.

2. Prior Research

In relation to L2 learning, MT is known to play four roles: MT as a desirable model, MT as a bad model, MT as a training tool for a profession, and MT as a "CALL tool" [6]. Most studies on the use and perceptions of MT have investigated its effectiveness and limitations, mainly focusing on MT's role as a "CALL tool". The results show that learners generally perceive the use of MT in L2 learning as a new and positive experience, and expect that MT will provide meaningful help for L2 learning despite a small number of errors [7].

A number of studies also show that MT has a positive effect on L2 learning. For example, students who used MT in L2 writing class produced a greater amount of text with more diverse words [8]. MT also helped learners write faster, more fluently and naturally with fewer grammatical errors [9]. Moreover, MT can provide individualized feedback on vocabulary and syntax that helps L2 learners to detect and correct errors, and thus acquire self-directed and independent learning skills in the writing process. [10]. This learning effect is more distinct with lower L2 level learners than advanced learners, suggesting that MT can be an effective tool for beginners [8].

However, MT's reliability has not yet been fully established as several studies have reported drawbacks such as awkward sentences, incorrect words, and inaccurate grammar [4]. As if reflecting this situation, many negative research results have been reported on MT use in L2 learning. MT's erroneous output not only hinders L2 learning, but can also result in learners skipping important steps in the writing process [11]. In particular, low-level students tend to rely on inaccurate translations, so MT may be inappropriate as a pedagogical tool for learners at this level [13]. Some studies also propose that MT should be limited in class, pointing out that it can become a tool for plagiarism or cheating despite its positive role in promoting learning [12].

3. Methods

3.1 Background and Procedure

The current study was conducted in a course titled 'Introduction to Reading in English' offered by the Department of English at a cyber university in Seoul. The course consisted of 121 pre-intermediate level learners (58 males and 63 females; ages 20-65) who consented to participate in the study. Although the class focused on English reading comprehension, the learners were given weekly assignments in order to improve their English writing skills. Students were asked to write a 100-120-word paragraph in English on a topic related to the content of the lecture.

In the 13th week, learners were to write a paragraph on the same topic as they did in the 12th week. One

week prior to the assignment, an online workshop was held to demonstrate how to use the most widely used MT services, Google Translate and Papago. For this assignment, instead of writing the paragraph in English, learners were asked to first write in Korean and then translate their writing using MT. In order to investigate learners' natural use of MT for a writing task, no specific guidelines were given other than prohibiting the use of dictionaries, grammar books, or other references while composing the paragraph.

3.2 Data Collection and Analysis

In this study, surveys were administered to investigate the participants' use and perceptions of MT. The survey was conducted twice—before and after the writing assignment. The first survey consisted of 5 items about the participant's past experiences of using MT, including frequency and purpose of use. The second questionnaire consists of 7 items on a 5-point Likert-scale from 1 (strongly disagree) to 5 (strongly agree). The items addressed two areas: perceptions on the quality of MT and perceptions of MT as a language learning tool. Two open-ended questions were added to gain detailed learner opinions on the pros and cons of MT. Frequency analysis was conducted on the responses to the survey, and some significant comments from the open-ended question were reported.

4. Results and Discussion

4.1 Learners' Previous Experiences with MT

The first survey focused on learners' experiences with MT prior to the current study. When asked whether they had ever used an online translator for English learning or other purposes, as shown in Figure 1, the majority (88.4%) answered that they had, while 11.6% answered that they had never used MT before. Of the 14 learners with no MT experience, 11 were in their 50s or older, implying that this age group has less access to the latest technology compared with younger age groups.
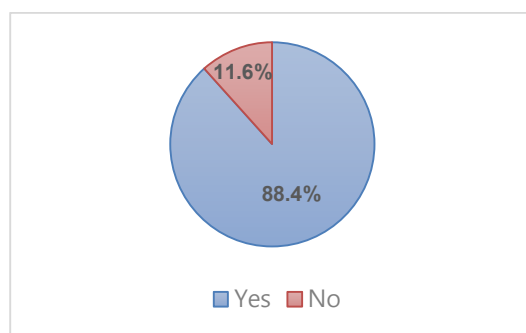

Figure 1. Prior MT experiences

As to which translation program was mainly used, Figure 2 shows that slightly more learners (33.1%) used Papago than Google Translate (25.6%), but the difference was not significant. 29.7% of the learners had used both translation programs, indicating that learners selectively use MTs according to their needs. Also, 11.6% of the learners used programs other than Google Translate or Papago. These responses suggest that MT has been widely used among cyber learners and that most are already familiar with MT.
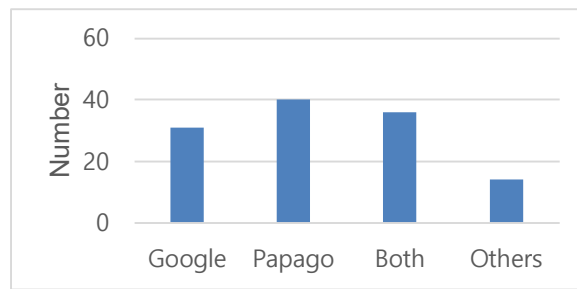
Figure 2. Main MT platform used

As for the frequency of MT use, as presented in Figure 3, 87 out of 121 learners (71.8%) responded that they used MT every day or 4-5 times a week while 16.6% used MT 'once a week' or 'rarely'. This result shows that MT has become such a familiar electronic device like smartphones that a majority of learners frequently and extensively use it for various purposes.
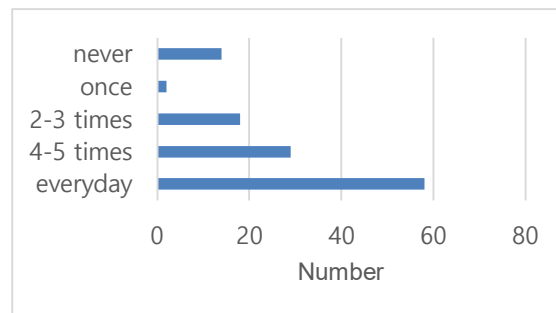
**Figure 3. Frequency of MT use**

As for the direction of translation, Figure 4 shows that English to Korean translation was the most common (44.6%), followed by two-way translation (34.7%) and Korean to English translation (20.7%). This result suggests that MT is used as an assistant tool for both reading and writing in English but that beginner-level learners use it more to understand English texts than to write in English.
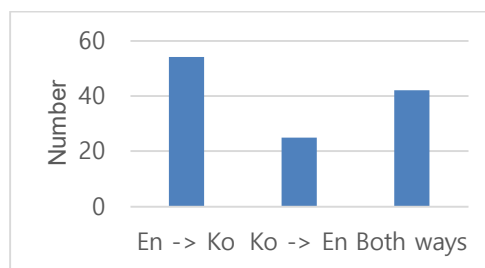
Figure 4. Translation direction in MT

When asked about the purpose of using MT for English learning, learners were allowed to select multiple responses. As shown below in Figure 5, among the five options given, the most common purpose was 'reading English texts' (59), followed by 'finding a word or expression' (51) and 'writing in English' (38). 20 learners answered that they used MT to check grammar. These results show that MT is not limited to its translation

function, but rather, for beginner level learners who rarely have opportunities to write in English, MT is also used as a dictionary, grammar checker, and supplementary tool for better understanding of English texts.
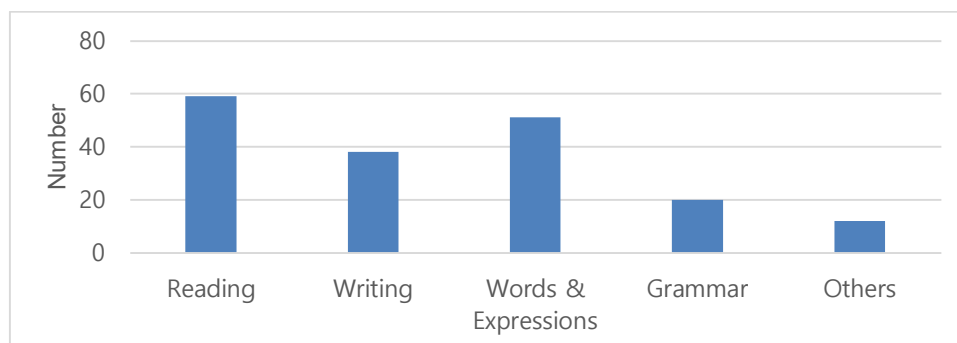
Figure 5. Purpose for using MT in English learning

4.2 Learners' perceptions of using MT

As shown in Table 1, Items 1-3 are related to perceptions on the quality of MT. About half of the learners (47.1%) responded that overall, they were satisfied with MT for writing assignments, whereas only 14% were not satisfied. As for the quality and accuracy of MT, more learners (36.4%) trusted MT than those who did not (14.1%), but half of the learners (44.5%) did not clearly express their view about this issue. This indicates that many learners expressed satisfaction in using MT. Nevertheless, the majority of students responded that MT's translation output was superior to their own. This response may explain why the number of learners who felt satisfied with MT was higher than that of those who trusted MT's quality and accuracy.

Table 1. Perceptions on the quality of MT

Item	SD	D	N	A	SA
1 Overall, I am satisfied with using MT for writing assignment.	2 (1.6%)	15 (12.4%)	47 (38.8%)	54 (44.6%)	3 (2.5%)
2 I trust the quality and accuracy of MT.	1 (0.8%)	16 (13.2%)	60 (49.6%)	43 (35.5%)	1 (0.8%)
3 The translation level of MT is higher than my translation level.	2 (1.6%)	11 (9.1%)	21 (17.4%)	68 (56.2%)	19 (15.7%)

As presented in Table 2, Items 4-7 deal with learners' perceptions of MT as a language learning tool. A large number of learners (44.5 %) responded that MT was helpful in improving their English, whereas only a small number of learners (12.9%) disagreed. In a similar vein, only 15.3% of the learners felt that relying on MT might be harmful in English learning. Moreover, almost half of the learners (48.7%) agreed that MT should be used more in English classes. In addition, 78.5% of the leaners confirmed that they would use MT for English learning in the future. These responses reveal that, in general, learners have a positive view towards the usefulness of MT in supporting their language learning process.

Table 2. Perceptions of MT as a language learning tool

Item		SD	D	N	A	SA
4	Using MT helps me improve my English.	6	15	46	50	4
		(5.0%)	(12.4%)	(38.0%)	(41.3%)	(3.2%)
5	Relying on MT is harmful to English learning.	7	41	51	12	9
		(5.8%)	(33.9%)	(42.1%)	(9.9%)	(7.4%)
6	MT needs to be used more in English classes.	9	19	34	51	8
		(7.4%)	(15.7%)	(28.1%)	(42.1%)	(6.6%)
7	I will use MT for English learning in the future.	2	3	21	76	19
		(1.6%)	(2.5%)	(17.4%)	(62.8%)	(15.7%)

Finally, Table 3 summarizes the four most frequent responses to the open-ended questions regarding the advantages and disadvantages of MT. According to most learners, the greatest advantage of MT was that it helped save time when writing by quickly and easily finding a word or expression they were uncertain about. Second, MT was helpful for understanding sentence structures and could be conveniently used for revising their drafts. Third, they could receive feedback without a teacher, which helped them to improve their English skills in a self-directed way.

Table 3. Advantages and Disadvantages of Using MT

Advantages	Disadvantages
Saving time when writing	Awkward sentences with grammatical errors
Finding uncertain words and expressions quickly and easily	Incorrect expressions making post-editing necessary
Revising drafts conveniently	Increasing the dependence on MT
Receiving useful feedback	

As for the disadvantages, many learners mentioned that MT generated many awkward sentences with grammatical errors, so reliability was an issue. Second, the translated output of MT contained errors or incorrect expressions, which resulted in low writing quality that made post-editing necessary. Third, in many cases, the learners accepted the output of MT without close review, which could increase dependence on MT and impede improvement of their English skills.

4. Conclusion

The results of this study show that MT has already been established as a familiar learning tool—almost 90% of the participants in the study had prior experience using MT. Learners did not rely on MT solely for translation, but used it frequently and extensively for various learning purposes according to their needs. In particular, many learners used MT as a dictionary to find vocabulary or expressions, or as a grammar checker to detect errors in their written work.

Meanwhile, learners' perceptions of using MT for English learning were generally positive. The learners reported several advantages: ease of use, helpful feedback, effective revision support, and facilitation of self-directed learning. They believed MT to be a useful learning tool for learning English and needed to be used more often in English classes. Nevertheless, a considerable number of learners were aware of MT's drawbacks,

such as awkward sentences, inaccurate grammar, and inappropriate words, and held a negative or skeptical view on the quality and accuracy of MT. Although the performance of MTs has recently and rapidly improved, the quality and accuracy of its output still does not seem to have reached a level that satisfies the majority of learners to receive high trust.

These findings have important pedagogical implications for using MT in the context of a cyber university. To successfully integrate MT in English classes, teachers need to provide appropriate guidelines and training that will help learners effectively use MT as they need to do when integrating online grammar checkers [13]. In particular, teachers need to provide feedback to the writing task of beginning level learners, who tend to uncritically accept the MT output. By doing so, learners can compare MT feedback with their teachers', resulting in better revision of their written work. This learning process is expected to contribute to the growth of self-directed learners with the ability to selectively accept the output of MT.

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