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A Preliminary Study on Exploring the Use of Translation Apps and Post-Editing Strategies of University Students †

Ya-Ting Zhan and Hsiao-Tung Hsu *

Department of Applied English, Chaoyang University of Technology, Taichung 413310, Taiwan; s11122603@gm.cyut.edu.tw

* Correspondence: hthsu@cyut.edu.tw

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Abstract: In the digital age, finding technology for English learning experience is imperative. With various language learning technologies emerging, many students are using translation applications (apps) as indispensable tools in their English learning. Previous research has primarily focused on the translation strategies for learners of English as a foreign language (EFL) and post-editing strategies using machine translation and the practices of professional post-editors and translators. We explored students' utilization of translation apps in the context of English language learning and their application of post-editing strategies to understand their perspectives on technology's role. A questionnaire survey was conducted to collect data from university students in Taiwan, which was analyzed utilizing descriptive statistics and one-way ANOVA via SPSS version 23. Students used translation apps to learn vocabulary and comprehend English articles. Post-editing strategies such as punctuation and terminology correction were not used frequently by the students. Most of them agreed that translation apps serve as valuable English learning supplements. By understanding the prevailing learning dynamics of university students, the results of this study lay a foundation for more investigations.

Keywords: translation apps; English learning; post-editing strategies

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1. Introduction

In the digital era, acquiring language skills has become ubiquitous with the help of various high-end technologies and applications (apps). Software is designed and available on mobile devices such as smartphones and tablets with versatile functions for various purposes [1]. Technology is seamlessly integrated into the language learning experience. With the advancement of translation tools, translation apps (e.g., Google Translate, DeepL Translate, and ChatGPT) assist students in learning English. For instance, teachers apply Google Translate in the classroom and teach students reading, writing, vocabulary skills, and translation. Students are not inclined to use them in translation assignments and writing assignments [2,3]. They can improve their language learning to indulge in their learning and better understand their abilities [3].

Given the inferior translation quality, post-editing is an imperative procedure. Post-editing (also called machine translation post-editing) is defined as the correction of the output produced by machine translation (MT), and based on the requirement of the final product, the target text is amended for translation quality [4,5]. Chang et al. [6] suggested that students must enhance their abilities in machine translation post-editing because they can learn how to recognize the quality of AI-generated texts. MT and translation apps assist students with their translation. Students can accelerate their work and strengthen their competence in transcreation.

Previous research has focused on the translation strategies utilized by learners of English as a foreign language (EFL) [7–10] and the post-editing strategies applied in MT. Researchers have delved into the practices of professional post-editors and translators [11,12]. We explored translation apps in the context of English language learning and investigated their application of post-editing strategies to understand technology's role in their English language learning. Post-editing originally refers to the modification of machine-generated texts. Since MT embodies many translation tools, we used the translated texts generated by translation apps for this study. Based on the purpose of the study, the following research areas for analysis were proposed:

1. Situations where students learn English with translation apps;
2. Post-editing strategies that students adopt after using translation apps;
3. Students' perceptions of using translation apps as an English learning supplement.

2. Literature Review

2.1. Translation in English Learning Strategy

Translation is widely used in English training and facilitates learners' English learning as long as teachers use it for teaching particular English skills [13]. Translation is advantageous for learners to acquire a second language (L2). For instance, they learn new vocabulary, grammatical structures, idiomatic expressions, reading and listening contexts, writing, and the differences and similarities between their first language (L1) and L2 [8,13,14]. Many researchers view translation as a beneficial and supporting method for language learning [7–9,13,15]. It is unavoidable for learners to use their mother tongue to think and comprehend the contexts while learning foreign languages [7,9,15]. On the other hand, several researchers have negative beliefs about using translation as a language-learning strategy because they regard it as a hindrance to their language acquisition [10,15]. Even so, they still think that translation helps them. Highly proficient learners prefer using English directly and translation strategies to find the differences and similarities between the two languages and improve their English skills. This causes them to rarely use translation strategies compared to those with low English proficiency [9,16,17]. Regardless of disparate opinions on strategy use, translation plays a significant role in language learning.

2.2. Post-Editing Strategies

In language learning, students use self-monitoring strategies to ensure that they comprehend correctly and regulate their ways of study [18,19], similar to the machine translation post-editing procedure. Students monitor and control their learning and reflect, improving their language learning outcomes and translation quality [20]. Machine translation post-editing is necessary for correcting a raw output [21,22]. A post-editor needs to ensure the MT-generated text fits the intended meaning of the source language and correct errors appearing in the target language [23,24]. When the post-editors conducted light post-editing, the translation text presented information appropriately and kept it semantically correct, including correcting words, grammar, and punctuation (i.e., linguistic MT errors). As for the full post-editing, the contexts must be grammatically correct and stylistically acceptable with translation quality, so the strategy of adding supplementary explanation (i.e., the correction of pragmatic errors and affective errors) is adopted [21,25–28].

It is essential to educate students to apply MT and post-edit its output. To guarantee the fluency and accuracy of the MT, students use various resources and MT tools to crosscheck [29,30]. In post-editing practices, students can notice different strategies in distinct fields, gain linguistic knowledge and translation skills exploited in both L1 and L2, and enhance the productivity and quality of translation texts [31–34]. Nonetheless, several researchers are concerned about the translation technology in language teaching and learning [33,35]. Although the quality of neural machine translation (NMT) has improved a lot, it cannot translate as well as humans. Students are inclined to rely exclusively on its outcomes but without an excellent language proficiency level and translation competence, contributing to the translation with errors [34–36]. Despite different factors that make

the results of post-editing questionable, students have a positive attitude toward post-editing [33,34,37].

2.3. Translation Tools

MT is a digital device to translate texts from one language into another without human intervention [38,39]. Owing to the large amount of MT, we used translation apps to help students translate using mobile devices such as smartphones and tablets. Teachers use translation apps in their teaching, impacting students' language learning [40–42]. Students showed progress in their translation performances and enhanced translation skills, promoting better conversational competence and cultivating linguistic skills [40,41,43,44]. Thus, translation apps need to be utilized in translation classes, and teachers must be open-minded with the use of translation apps in class and teach students how to use them wisely [41,43]. Researchers have a positive attitude toward using Google Translate because they regard it as a significant tool for improving language competence.

3. Methodology

We collected data from university students in Taiwan using a questionnaire survey, which consisted of seven demographic questions and 42 questions related to English learning, post-editing strategies, and students' perspectives. A five-point Likert scale was used in the survey: 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. The questionnaire was modified for learning strategies [9] and post-editing strategies [12,45]. The survey was administered online, and the data collected were analyzed using descriptive statistics and one-way ANOVA via SPSS version 23.

Thirty-two students were randomly selected for the preliminary questionnaire study. Reliability and consistency were assessed for the quality of research [46]. To test the reliability, Cronbach's α was adopted in this study. Generally, Cronbach's α of 0.7 is deemed acceptable, and a value greater than or equal to 0.9 stands is regarded as excellent. The Cronbach's α of this questionnaire was 0.936, revealing a high level of consistency for 42 items in the questionnaire. Considering the value of Cronbach's α and the types of questions, items 13 (Cronbach's α if Item Deleted = 0.936) and 14 (Cronbach's α if Item Deleted = 0.936) were deleted. Hence, there were seven demographic questions and 40 questions in total. Three professors specializing in English teaching evaluated this questionnaire's validity and provided suggestions for improving its validity, referring to how accurately a measure reflects the reality of the sampled items [47]. The order of questions was reorganized and divided into four sections: (1) background information, (2) the use of translation apps in English learning, (3) post-editing strategies, and (4) students' perspectives.

The research was conducted in the following six steps as depicted in Figure 1. First, we identified the problems. Second, the literature review was conducted. Third, a questionnaire was devised. Fourth, the questionnaire survey was conducted. Fifth, the questionnaire was modified for the survey (Figure 1).

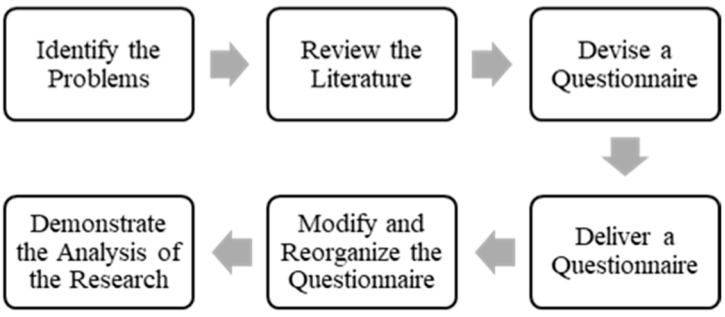

Figure 1. Flow chart of procedure of this study.

4. Results and Discussion

The respondents included 28 females (87.5%) and 4 males (12.5%). To distinguish students' English proficiency, they were assessed for language ability using the Common European Framework of Reference for Languages (CEFR). Students at CEFR B1 (Threshold) level represented the majority (N = 12), followed by CEFR A2 (Waystage) level (N = 8), CEFR A1 (Breakthrough) level (N = 5), CEFR B2 (Vantage) level (N = 5), CEFR C1 (Effective Operational Proficiency) level (N = 2), and CEFR C2 (Mastery) level (N = 0).

The situation of students' English learning with translation apps was revealed in items from 1 to 26 except items 13, 14, 23, and 24. The average score was 3.63, and the score ranged from 2.75 to 4.44. Item 26 (M = 4.44), item 8 (M = 4.28), item 7 (M = 4.03), and item 2 (M = 4.03) showed higher scores. The respondents used translation apps for vocabulary learning and understanding English articles. They did not use it before reading English articles as presented in item 1 (M = 2.75). There was a statistically significant difference in English proficiency (item 19). The threshold was set at 0.05. One-way ANOVA results showed that translation apps helped to recall the content of English lessons (at a significance of 0.014 ($p < 0.05$)). In addition, multiple comparisons of Scheffe's test revealed that students at the CEFR A2 level significantly differed from those at the CEFR C1 level ($p = 0.047 < 0.05$). Students at the CEFR A2 level were more serious and better than those at the CEFR C1 level in using translation apps to recall the content of English lessons.

The average score of students' post-editing strategies for translation apps was 3.75. Most students perceived that post-editing strategies after using translation apps helped them accomplish their translation more quickly (item 36, M = 4.06). The standard deviation (0.95) presented a concentrated distribution. The scores for items 30, 31, 33, and 32 elucidated that students rarely corrected the punctuation (M = 3.31), terminology use (M = 3.44), cultural references and metaphorical expressions (M = 3.47), and added supplementary information or explanations (M = 3.72). There was a significant difference between item 32 and English proficiency ($p = 0.012 < 0.05$). Students' post-editing of supplementary information or explanations in the translation text was significant compared with different English proficiency. According to the results of multiple comparisons of Scheffe's test, learners at the CEFR B1 level and those at the CEFR C1 level showed significant differences ($p = 0.043 < 0.05$). Students at the CEFR B1 level added supplementary information or explanations in the translated text better than those at the CEFR C1 level during strategy use.

Items 23, 24, 27, 40, 41, and 42 were asked to examine students' perceptions. The average score was 3.57, ranging from 3.06 to 4.06. Most participants thought translation apps were helpful English learning supplements (4.06), and the standard deviation (0.91) indicated a relatively concentrated distribution. They had concerns with the translation quality produced by translation apps (item 23, M = 3.06 and item 27, M = 3.09). The correlation between the score of item 24 (I think translation apps are good English learning supplements) and English proficiency was 0.024 ($p < 0.05$), demonstrating that they were significant. The correlation was significant ($p = 0.045 < 0.05$) for students at the CEFR A2 level and CEFR C1 level and was more significant for students at the CEFR A2 level (MD = 2.1250*). The overall descriptive statistics are presented in Table 1.

Table 1. Descriptive statistics of students at three levels in variance.

Item	Mean	Standard Deviation	N
A	3.63	1.12	32
B	3.75	1.16	32
C	3.57	1.04	32

(A: the situation of students' English learning with translation apps, B: post-editing strategies, and C: students' perspectives).

5. Conclusions

Most students learn vocabulary and comprehend reading passages via translation apps. In the question survey, item 19 (I use translation apps to recall the content of English lessons better) was related to English proficiency. Students with low English proficiency preferred to use translation apps to recall the content of English lessons to those with high English proficiency. Most students seldom added supplementary information or explanations, modified cultural references and metaphorical expressions, or corrected the terms and punctuation. Item 32 (I add supplementary information or explanations in the translation done by translation apps to ensure the completeness of the translation work) was significantly different among students at different levels. Students at the CEFR B1 level adopted this strategy more frequently than students at the CEFR C1 level when post-editing the texts. Moreover, they were positive about using translation apps as English learning supplements. Students with low English proficiency were more agreeable to the statement. Students who were not skilled in English had more positive attitudes toward English learning and post-editing strategies with translation apps.

Due to the limitations of this study, the results of this study cannot be generalized for all university students. Accordingly, it is necessary to conduct further research with more samples and questions. Then, the prevailing learning dynamics of university students can be elucidated to understand more about the use of English learning apps.

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