Exploring the Impact of Error Correction Tasks on Enhancing L2 Learners' Language Error Awareness When Using Google Translate as a Tool

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Abstracts

In recent years, error correction tasks have been widely used in second language writing instruction to help students develop language accuracy and error awareness. With the rapid development of technology, digital tools such as Google Translate have become increasingly popular among second language learners. However, there is limited research exploring the impact of using digital tools like Google Translate in error correction tasks. This study aimed to fill this gap by investigating the impact of error correction tasks on language accuracy and error awareness among second language learners, with a focus on the use of Google Translate. The participants consisted of 60 undergraduate students from a university located in northeastern Thailand. A quasi-experimental research design was employed using both quantitative and qualitative research methods. The study used a *t*-test technique and a semi-structured interview technique, and applied the nonequivalent groups' pre-test/post-test control and comparison group design to explore the overall effect of using error correction tasks on improving student writing and language error awareness. The results show that the treatment group who used Google Translate with the guidance of their teachers (M=24.87, SD=5.92) were better able to correct their language errors than those in the control group (M=16.23, SD=4.85). The findings suggest that error correction tasks and Google Translate have a significant impact on supporting students' learning. The Language Awareness Development Questionnaire was completed by 30 participants, revealing that participants had a high level of language awareness development. The study indicates that error correction tasks, when used in conjunction with supportive tools like Google Translate and the teachers' guidance, can be effective for developing language error awareness in second language learners.

Keywords: Error correction tasks; language error awareness; second language learners; Google Translate

Introduction

English writing classes in Thailand have seen a significant change in recent years with the increasing use of technology in the classroom. One of the most widely used technology tools in English writing classes is Google Translate, a free online translation tool that allows users to translate text from one language to another. Despite its widespread use, there is still ongoing debate over the effectiveness of using Google Translate in the classroom.

Google Translate has become a widely-used tool for language learners, particularly in the context of second language (L2) writing. Research in L2 writing contexts has shown that Google Translate led to an improvement in the participants' writing skills in English and participants' writing proficiency increased in areas such as grammar, sentence structure (Hanson-Smith, 2013:205-223). Cancino and Panes (2021: 61-73) pointed out that the use of Google Translate resulted in increased accuracy and fluency in writing, it also led to a decrease in originality and coherence among Chilean EFL high school learners. Similarly, the study of Tsai (2019) found that Google Translate significantly improved several writing parameters compared to self-written texts. Lee (2020: 797-815) investigated the role of Google Translate in improving writing quality and creating writing strategies among 34 university EFL learners and found that Google Translate helped learners reduce lexico-grammatical errors and positively affected their writing strategies. Stapleton and Kin (2019: 28-49) conducted a study in Hong Kong and found that Google Translate compositions were graded higher in terms of grammar than those written without Google Translate, and the majority of teachers were not against the use of Google Translate as a learning tool. In addition, research has shown that students have positive attitudes towards the use of Google Translate in their English writing classes (Sukkhwan, 2019: 1-16; Chompurach, 2021: 116-134.). However, students also recognized the limitations of the tool and were aware of the potential errors that could arise from its use as well as the potential inaccuracies and the risk of over-reliance.

Although Google Translate can help L2 learners to develop their writing, concerns have been raised regarding the tool's accuracy and its impact on L2 learners' error awareness. For example, Dodigovic (2005: 207-223.) investigated the use of Google Translate as a tool for raising error awareness in L2 writing. The study found that while Google Translate can be helpful in identifying errors, it also introduces new errors and does not always provide accurate translations. Similarly, Patanasorn (2017: 161-166) and Graham, Laferrière, and Kruiper (2018: 237-247) found that although Google Translate can be a useful resource for obtaining a general understanding of text and for language learners, there were some limitations of machine translation tools. Therefore, explicit instruction and critical thinking activities in language instruction are needed to ensure the quality and accuracy of translated texts. Moreover, Telaumbanua (2019: 203-   212) pointed out that learners often rely too heavily on the tool and do not critically evaluate the translations it provides, leading to errors in their writing. Cancino and Panes (2021: 61-73) investigated the impact of Google Translate on L2 writing quality measures among Chilean high school learners and found that while Google Translate can improve fluency and vocabulary use, it also leads to an increase in errors and a decrease in overall writing quality. Likewise, Chompurach (2021: 116-134.) examined Thai EFL students' attitudes and behaviors towards using Google Translate in English writing. The study found that while students saw Google Translate as a helpful tool for writing, they also recognized its limitations and preferred to use it in conjunction with other resources to ensure accuracy. Lee (2022: 102574) explored the different effects of Google Translate on L2 revisions across students' writing proficiency levels. The study found that lower proficiency students tended to rely more heavily on the tool, resulting in less accurate revisions, while higher proficiency students were able to use it more effectively as a reference tool. These are in line with Panah, Yunus, and Babar's(2022: 25-33) study which suggested that language instructors need to

educate their students about the limitations of machine translation tools and to provide them with strategies for using these tools effectively, and Phuong Anh, Nguyen et al. (2021: 45-58) whose study pointed out that Google Translate can be an effective supplement to traditional language instruction, however, both teachers and students should be provided appropriated training to ensure effective use of the tool. Similarly, Alrajhi (2022: 1-19) examined the effect of using Google Translate as an assistive tool in L2 writing and found that its effect on writing output quality was influenced by the genre of the writing task. Specifically, the study found that Google Translate improved the quality of narrative paragraphs but had a negative effect on the quality of argumentative essays. Likewise, Rejuna (2020: 289-292) studied the use of Google Translate as a learning tool in translation courses and identified several problems, such as accuracy, idiomatic expressions, style, register, and cultural nuances.

The use of Google Translate in English writing has become increasingly common in recent years, especially among second language learners. While Google Translate can be a useful tool for translating words and phrases, it is not always accurate and can lead to errors in grammar, vocabulary, and syntax. To address this issue, many educators have incorporated error correction tasks into their teaching practices to help students improve their writing accuracy and language error awareness.

Research has shown that error correction tasks can be effective in enhancing second language learners' writing accuracy and error awareness. For example, in a study conducted by Gholami and Jafari (2016: 25-37), Iranian EFL students who received error correction feedback on their writing demonstrated significant improvement in their writing accuracy compared to those who did not receive any feedback. Similarly, in another study by Zhang and Elder (2011: 1-14), Chinese EFL students who received error correction feedback through peer review showed significant improvement in their grammar and vocabulary usage.

In the context of using Google Translate in English writing, the combination of error correction tasks with the use of the software can lead to even greater improvement in writing accuracy and language error awareness. A study by Hien and Thinh (2021: 883-898) examined the impact of error correction tasks on the development of writing accuracy and language error awareness among Vietnamese EFL learners who used Google Translate. The study found that students who used Google Translate with the guidance of their teachers and received error correction feedback were better able to correct their language errors than those who did not receive any treatment. The findings suggest that the use of Google Translate, when combined with error correction tasks, can be an effective tool for improving writing accuracy and language error awareness among second language learners.

Overall, the use of error correction tasks in conjunction with Google Translate can provide a comprehensive approach to improving writing accuracy and language error awareness among second language learners. By incorporating error correction tasks into their teaching practices and providing guidance on the use of Google Translate, educators can help students overcome the limitations of the software and develop more effective language skills.

While Google Translate can be a beneficial tool for language learning and translation, it is essential to use it cautiously and in conjunction with other strategies to support effective and responsible use. Additionally, it is crucial to spplement it with other materials and techniques to enhance accuracy, fluency, and proficiency, as well as to provide appropriate training and guidance. Moreover, it remains unclear how L2 learners comprehend language errors and feedback when using Google Translate. Research is needed to investigate whether

they can identify and correct errors on their own and understand the feedback provided by the tool and their teachers. Therefore, the current study aims to explore the effectiveness of error correction tasks in enhancing language error awareness when using Google Translate in English L2 writing classes.

Research Objectives

To investigate the impact of error correction tasks on the development of second language learners' language error awareness.

Literature Review

Google Translate is a machine translation tool developed by Google that provides translations of text between different languages. Since its launch in 2006, Google Translate has been widely used around the world, making it one of the most popular translation tools available. The following literature review provides an overview of the key research studies that have been conducted on Google Translate and its effectiveness in translating different languages.

In a study conducted by Yeh and Wang (2016 : 209-222), the effectiveness of Google Translate was compared to the performance of human translators in translating Chinese tourism texts into English. The results showed that while Google Translate produced translations with a high degree of accuracy, human translators still outperformed the machine translation tool in terms of overall quality and fluency. Similarly, a study by Aharoni et al. (2019 : 23) compared the performance of Google Translate to that of human translators in translating news articles from English to Arabic. The study found that while Google Translate was able to provide translations quickly, the quality of the translations was lower than those produced by human translators.

However, other studies have shown that Google Translate can be effective in translating certain types of text. In a study by Pinto and Morais (2018 : 111-126), the performance of Google Translate was evaluated in translating scientific texts from Portuguese to English. The results showed that Google Translate was able to produce translations with a high degree of accuracy and that the quality of the translations was comparable to those produced by professional translators. Another study by Horst and Margetts (2019 : 47-62) evaluated the effectiveness of Google Translate in translating poetry from German to English. The results showed that while the translations produced by Google Translate were not as nuanced or polished as those produced by professional translators, they still provided a reasonable approximation of the original text.

In Thailand, Google Translate is a popular machine translation tool that is widely used for English writing classes. For example, in a study by Boonkit and Raksasri (2013 : 163-171), the effectiveness of using Google Translate as a tool for English writing practice was evaluated. The study found that while Google Translate was useful for generating ideas and providing basic language structures, it was not reliable for producing accurate or idiomatic English sentences. The authors suggested that teachers should use Google Translate as a supplementary tool in the classroom, rather than as a replacement for traditional language learning methods. Similarly, a study by Suksai and Wongchantra (2018 : 174-192.) evaluated the effectiveness of

Google Translate in improving the writing skills of Thai undergraduate students. The study found that while Google Translate was helpful for improving the students' vocabulary and grammar, it did not effectively address their weaknesses in writing coherence and organization.

However, other studies have shown that Google Translate can be effective in certain contexts. In a study by Patpong and Saengchan (2017: 44-52), the use of Google Translate was evaluated as a tool for improving the translation skills of Thai English language students. The study found that Google Translate was effective in helping students to identify and correct errors in their translations, and that it improved their confidence in using English. Another study by Thongchai and Boonkit (2016: 386-390) evaluated the use of Google Translate as a tool for teaching vocabulary in the context of Thai tourism. The study found that Google Translate was an effective tool for helping students to understand and learn the specialized vocabulary of the tourism industry.

In terms of language error awareness, Google Translate's reliability and accuracy are often questioned in language teaching and learning contexts. Many studies were conducted to explore the use of Google Translate in developing language error awareness in English writing classes. For example, in a study by Lee (2017: 41-50.), the use of Google Translate as a tool for error correction was evaluated. The study found that while Google Translate was useful for identifying and correcting simple errors, it was not effective in detecting more complex errors. The study also suggested that the use of Google Translate can be a useful tool for developing language error awareness, as it can help learners identify their own errors and learn from them. Similarly, a study by Díaz (2021: 56-70) explored the impact of using Google Translate as a tool for self-correction in a university-level English writing class. The study found that the use of Google Translate led to a significant improvement in students' ability to self-correct their language errors, and that it increased their awareness of the types of errors they commonly made. The study concluded that the use of Google Translate as a tool for self-correction can be an effective strategy for developing language error awareness in second language learners. Another study by Bao and Zhang (2020: 752-771) evaluated the effectiveness of using Google Translate as a tool for error correction in a writing class for Chinese students learning English as a second language. The study found that the use of Google Translate was effective in helping students identify and correct their language errors, and that it increased their awareness of the types of errors they commonly made. The study suggested that Google Translate can be a useful tool for developing language error awareness, but that it should be used in conjunction with other language learning strategies and with teacher guidance.

In conclusion, it is noted that while Google Translate is widely used, it is still not as accurate or fluent as human translators, although it can be effective in translating certain types of text. Furthermore, it is emphasized that Google Translate should be used as a supplementary tool in the classroom rather than as a replacement for traditional language learning methods. Several studies are mentioned which evaluated the effectiveness of Google Translate as a tool for developing language error awareness in English writing classes. Overall, the literature suggests that Google Translate can be a useful tool for developing language error awareness in English writing classes, but it should be used in conjunction with other language learning strategies and with teacher guidance.

Research Methodology

Participants

The study included 60 undergraduate university students from the northeastern region of Thailand, who were divided into two groups. The treatment group used Google Translate with error correction tasks, while the control group completed the task using Google Translate without any error correction tasks.

Research Design

The study used a pretest-posttest design with a control group. Participants were randomly assigned to either a treatment group or a control group. The experimental group received explicit language awareness instruction on the targeted grammar structures, while the control group received standard classroom instruction. The study was conducted over a period of six weeks. The experimental group received explicit instruction on the targeted grammar structures, including explanations, examples, and practice activities. The control group received standard classroom instruction, which did not focus specifically on the targeted structures. Both groups completed pretest and posttest measureed of targeted grammar knowledge. The posttest included a questionnaire to assess participants' perceptions of their language awareness development.

Research Tools

Research Tools in this study consisted of error correction tasks which provide learners with a text that contains errors, and they are required to identify and correct them. This task measures learners' ability to identify and correct language errors accurately. According to Brown and Abeywickrama (2010:1), error correction tasks can improve learners' accuracy in language use, increasing their awareness and ability to produce accurate and appropriate language. Ellis (2015:1) adds that error correction tasks can serve as a formative or self-assessment tool, as well as a collaborative learning activity, and should be designed to offer informative and meaningful feedback to learners. In this study, the error correction tasks were taken from learners' writing papers. Errors included of capitalization errors, grammar, syntax, coordinate conjunction words errors and punctuation.This activity was used in language classrooms to see whether learners can develop their language proficiency by identifying and correcting the target errors.

To gain a deeper understanding of students' language error awareness, both a questionnaire and a semi-structured interview were utilized. The questionnaire comprised ten items that inquired about how students perceived themselves after utilizing error correction tasks. On the other hand, a semi-structured interview was conducted to obtain in-depth information about their awareness.

Data analysis

The performance of the experimental and control groups was compared by analyzing the pretest and posttest measures using independent samples *t*-tests. The questionnaire responses were analyzed using descriptve statistics and content analysis.

Research Findings

The aim of this study was to investigate the impact of error correction tasks on the development of second language learners' writing accuracy and language error awareness. Analysis of the data presented in Table 1 shows that the average score of the treatment group (M=24.87, SD=5.92) was significantly higher than that of the Control group (M=16.23, SD=4.85), t (58)= -6.178, p=.001. These results suggest that learners who used Google Translate with the guidance of their teachers were better able to correct their language errors than those in the control group who did not receive any treatment.

To investigate whether there was a significant difference in terms of students' writing accuracy between the pre-test and post-test scores in the treatment group, a paired-samples t-test was conducted. As shown in Table 2, students in the treatment group were able to correct errors in their writing between the pre-test (M=11.43, SD=2.87), and post-testt (M=24.87, SD=5.92), with a significant difference at the 0.05 probability level (p=0.001). This indicates a statistically significant difference between the pre-test and pos-test scores following the use of error correction tasks, with teacher guidance, to correct texts translated by Google Translate in their writing.

Table 1 Results from the t-test for the treatment and control groups

Groups	N	M	SD	t	df	P
Control	30	16.23	4.85	-6.178	58	.001
Treatment	30	24.87	5.92			

Table 2 Results from the t-test for the pre-test and the post-test in the treatment group

| Groups | N | M | SD | *95%* confidence interval of the difference | | t | P |
				Lower	*Upper*		
Pre-test	30	11.43	2.87	12.10	14.76	20.67	.001
Post-test	30	24.87	5.92				

From the questionnaire, the findings indicate that all students in the study used Google Translate (see Figure 1). Among these users, the majority (57%) reported using Google Translate frequently in every writing class, while 27% reported using it occasionally. Only a small proportion (16%) of the users reported rarely using Google Translate in their writing tasks. These results suggest that Google Translate has a significant impact on supporting students' learning.
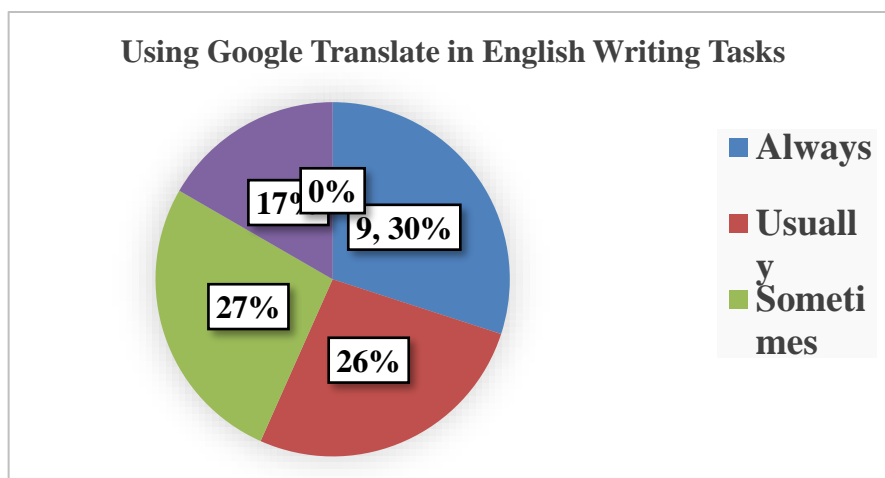
Using Google Translate in English Writing Tasks

- Always
- Usually
- Sometimes

9, 30%

26%

27%

17%

0%

Figure 1 Participants Frequency in Using Google Translate in English Writing Tasks

The Language Awareness Development Questionnaire was completed by 30 participants who responded to each item using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The mean score for the questionnaire was 4.32 (S.D.=0.57), indicating that participants had a high level of language awareness development. When examining individual items, several trends emerged. Item 10, which assessed participants' perception of error correction tasks as a valuable learning experience, had a very high mean score of 4.83 (S.D.=0.38), indicating that most participants agreed that the error correction tasks had a positive impact on their error awareness development. Similarly, Item 7, which examined participants' attitude towards the feedback provided during the error correction tasks, had a very high mean score of 4.80 (S.D.=0.41), suggesting that the feedback provided during the error correction tasks was helpful for improving their language awareness.

In contrast, Item 3, which asked about the impact of error correction tasks on grammar and vocabulary development, had a lower mean score of 3.97 (S.D.=0.41), indicating that the error correction tasks had a moderate impact on participants' development of grammar and vocabulary. These findings suggest that while participants generally had a high level of language awareness development, the error correction tasks were perceived to be valuable for enhancing their awareness of errors, but had a limited impact on their development of grammar and vocabulary (see Table 3).

Table 3 Averaged Mean Scores of the Language Awareness Development Questionnaire

Items	Statements	$\bar{X}$	SD
		Levels	
1	The error correction tasks helped me become more aware of my language errors when using Google Translate.	4.23	0.63
2	I am more confident in my ability to identify and correct language errors after completing the error correction tasks.	4.07	0.64
3	The error correction tasks helped me learn more about the grammar and vocabulary of the language.	3.97	0.41
4	I would like to do more error correction tasks in the future to continue developing my language awareness.	4.53	0.63
5	I feel that my language awareness has improved as a result of participating in the error correction tasks.	4.00	0.45
6	The error correction tasks were challenging, but helpful for improving my language skills.	4.43	0.50
7	I found the feedback provided during the error correction tasks to be helpful for improving my language awareness.	4.80	0.41
8	The error correction tasks helped me become more aware of my own language learning strategies.	4.33	0.48
9	The error correction tasks helped me become more aware of common errors made by L2 learners	4.13	0.63
10	I carefully read the entile text from Google Translate after using the error correction tasks.	4.83	0.38
	Average	4.33	0.52

To obtain a more detailed understanding of how error correction tasks affect participants' perceptions of English writing accuracy and language awareness, a semi-structured interview technique with ten questions was employed. A random selection of ten participants from the experimental group underwent individual interviews. Qualitative interview findings revealed that students significantly improved their writing accuracy by utilizing error correction tasks. This included their sentence structures in terms of grammar, coordinate conjunctions, word usage, and punctuation. Furthermore, regarding language error awareness, the majority of students acknowledged that prior to receiving teacher guidance on the errors made by Google Translate, they heavily relied on the software by simply copying and pasting the passages obtained from it. Moreover, they stated that the use of Google Translate in combination with the error correction tasks inspired their language error awareness. Students took greater responsibility for their learning, focusing on producing better work since they now recognize that while Google Translate can quickly translate Thai passages into English, the software still has limitations.

In conclusion, the study aimed to investigate the impact of error correction tasks on the development of language accuracy and error awareness among second language learners using Google Translate with teacher guidance. The results showed that the treatment group who used Google Translate with teacher guidance were better able to correct their language errors compared to the control group. The paired-samples t-test indicated a significant difference in writing accuracy between the pre-test and post-test scores in the treatment group. The questionnaire and interview findings revealed that students frequently used Google Translate and perceived the error correction tasks as valuable for developing error awareness. However, the impact on grammar and vocabulary development was perceived to be moderate. Overall, the study suggests that the use of error correction tasks with Google Translate, guided by teachers, can be effective in developing language error awareness among second language learners. Students recognized the limitations of Google Translate and took greater responsibility for their learning, resulting in improved writing accuracy and increased error awareness (See Figure 2).
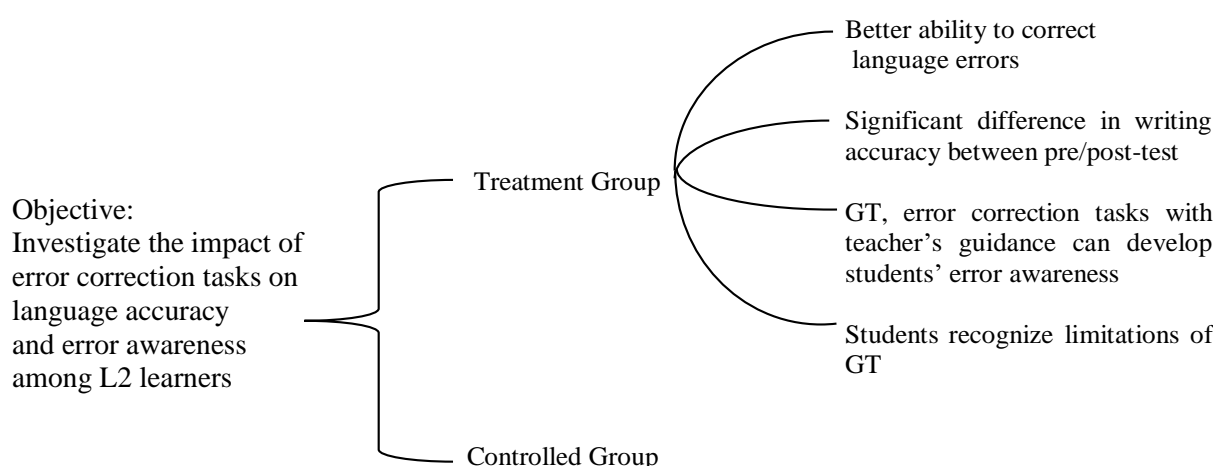

Figure 2 Impact of Error Correction Tasks with Google Translate on Language Accuracy and Error Awareness

Discussion

The results of this study suggest that the use of error correction tasks and Google Translate can have a significant impact on second language learners' writing accuracy and language error awareness.The treatment group, which had access to Google Translate with the guidance of their teachers, had a significantly higher average score than the control group, indicating that the use of Google Translate can be a supportive tool in correcting language errors. The findings from the questionnaire also suggest that Google Translate is widely used by students, with the majority reporting frequent use in every writing class.

The use of Google Translate in language learning has been widely debated in the literature. Some studies have highlighted its potential benefits, such as supporting students' vocabulary learning (Li, Wang, & Li, 2021: 732-763). However, other studies have warned about the limitations and potential negative impact of Google Translate on language learning (Wang, Yang, & Liu, 2020: 51-64), and should be integrated with teachers' guidance (Phuong Anh et al, 2021: 45-58; Chompurach, 2021: 116-134.). The present study adds to this discussion by demonstrating that the use of Google Translate, combined with error correction tasks and teacher guidance, can positively impact students' language error awareness and writing accuracy.

The findings of this study are consistent with previous studies that investigated the effectiveness of error correction tasks in enhancing second language writing accuracy. For example, Wang, Li, and Ma (2021: 1-18.) found that error correction tasks were effective in improving the writing accuracy of Chinese EFL learners. Another study by Chen, Zhou, and Gu (2017: 13-26) also showed that error correction tasks significantly improved the writing accuracy of Chinese EFL learners. Similarly, other studies have found that feedback and error correction tasks can improve students' writing accuracy and promote their language awareness (Ferris & Hedgcock, 2013:1; Sheen, 2007: 255-283).

Recommendations

Although the current study offers finding that the use of error correction tasks and Google Translate in second language learningcan be effective in enhancing language error awareness, it would be beneficial for future studies to explore the effectiveness of error correction tasks and Google Translate in different learning contexts, such as speaking and listening skills. Additionally, research could investigate the impact of other technological tools and resources on language learning, and how they can be integrated into teaching practices.

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