

Exploring the Affordances of *Google Translate* Use in EFL Writing

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Abstract**Original Research Article**

Grounded in an ecological perspective, this study examined the affordances that Chinese EFL students realized when they used *Google translate* (GT) in their EFL writing. The data were collected from a general survey and a series of stimulated recalls. Through the analysis of the survey, GT use was found to possess multiple potential learning opportunities that the participants claimed to have realized as affordances. A close look at the stimulated recalls revealed that these reported affordances had been leveraged differently among the case-study participants of varying EFL proficiency. The results shed light on how EFL teachers can make better use of GT to help students improve their EFL writing.

Keywords: Google Translate, EFL writing, affordances, ecological perspective, learner agency, English proficiency.

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INTRODUCTION

Machine translation (MT) technology has been upgraded in recent years. For instance, *Google Translate* (GT), as a MT tool, has evolved from its earlier version introduced in 2006 to the recent AI-based version launched in 2016 (Wang et al., 2022). Owing to the AI technology, the upgraded GT can work much better than its earlier version (Ducar & Schocket, 2018), and the quality of its output outperforms that of EFL students (Tsai, 2022) and meets the minimum proficiency requirement for being admitted to universities (Groves & Mundt, 2015).

With the advances in MT technology, MT use has become popular among L2 learners in recent years (Sasaki et al., 2024; Yu & Jiang, 2025). They were reported to have tried using MT in their L2 learning even when they were not allowed to do so by their teachers (Ducar and Schocket *ibid.*). As with the wide use of MT among L2 learners, there is an increasing number of studies investigating MT use in EFL writing (Chung & Ahn 2022; Lee, 2022; Pham, 2025). It has been revealed that GT use in EFL writing could help EFL students reduce their lexical and grammatical errors (Lee, 2020) and assist them to produce better EFL writing drafts in general (Tsai, 2020). Also, it has been found that students of higher proficiency (HP) benefited more from using GT in their EFL writing than their peers of lower proficiency (LP) (Chung & Ahn 2022; Lee & Briggs

2021; Lo, 2025). These studies suggest that MT use is useful for improving students' EFL writing drafts and their improvement is in relation to their English proficiency. However, it is unclear about what learning opportunities are used by students of varying English proficiency make such improvement.

Guided by an ecological perspective (van Lier, 2000, 2004), this study aimed to investigate the learning opportunities embedded in GT use in EFL writing from the perspective of affordances. In Gibson (1979), affordances are the properties of the environment that people consider useful or useless. van Lier (2000) understands affordances as the perceived opportunities that an environment provides for agents to take actions. In line with van Lier (2004), affordances highlight the role of learner agency in actions, are dynamic, and emerge during learners' interactions with their learning environment. Affordances and learner agency coexist with each other (van Lier, 2000). Learner agency is learners' capabilities to perceive and their willingness to act upon the potential learning opportunities in the context (Gao, 2010; van Lier, 2000). In this study, affordances are construed as the contextual learning opportunities that L2 students exercise their agency to perceive and to act upon when using GT in their EFL writing. For the potential learning opportunities to be leveraged as affordances, learners need to exercise their agency that match the learning resources available in the environment (van Lier, 2004). Thus, this study attempted

to investigate the affordances that Chinese EFL students of varying English proficiency realized from GT use in their EFL writing with the research questions formulated as follows.

1. What are the affordances that Chinese EFL students admitted having realized from GT use in their EFL writing?
2. Are there similarities or differences in the affordances realized by Chinese EFL students of varying English proficiency from GT use in their EFL writing?

MATERIAL AND METHODS

Participants

Thirty-three Chinese English-major students from an intact class agreed to join this study and written consent was obtained from them. All participants were in the second semester of their college life and were

involved in the *English Writing* course in which the study was conducted. To differentiate their EFL proficiency, the *Oxford Quick Placement Test* (2001) was implemented before the study. Their test scores ranged from 30 to 47, and the mean score and the standard deviation were 37.52 and 4.37 respectively. In line with Cohen (1992), the between-groups mean score gap reaching one standard deviation suggests that there is a significant difference between the two groups. Thus, eleven students with scores more than 39.71 were considered as HP participants and nine students with scores lower than 35.34 were considered as LP participants. An ensuing independent samples *t*-test revealed a significant difference between HP and LP participants ($p < .01$). Meanwhile, as illustrated in Table 1, four case-study participants with pseudonyms were selected with their English proficiency and gender considered.

Table 1: Profiles of the case-study participants

Participant (pseudonyms)	Gender	Score	English proficiency
Shirley	Female	44	HP
Paul	Male	42	HP
Linda	Female	33	LP
Leo	Male	31	LP

Data collection and analysis

To address the research questions, participants were arranged to use GT repeatedly for four writing assignments in a 16-week term. They finished each writing assignment in line with the four-step writing cycle stipulated by the instructor. In the 1st step, after a ten-minute brainstorm, the participants were given half an hour to finish their writing in Chinese. In the 2nd step, they were required to write out their English versions within 40 minutes and send their Chinese versions and self-written English versions to the instructor's email. In the following session, they had 40 minutes to revise their self-written English versions with reference to the GT-generated English versions and then sent the revised versions to the instructor as the 3rd step. In the final step, they handed in their final versions with reference to the feedback from their instructor.

In the study, all 33 participants responded to a general survey (see Appendix A) on the affordances that they realized from GT use in EFL writing on the day when they finished the 3rd step of the 3rd writing assignment. In the survey, they were given approximately 20 minutes to write down all the affordances that they had experienced. In line with the results of the survey, the question items for stimulated recalls (see Appendix B) were designed and they were conducted with the four case-study participants two days after the general survey. The recalls were used to reveal the extents to which the participants were able to perceive and were willing to act upon the potential

learning opportunities embedded in GT use in their EFL writing. The data from the general survey and the stimulated recalls were both first thematically coded by the researcher and were then double checked by an experienced EFL writing teacher with a doctoral degree in applied linguistics. A minor discrepancy in the categorization of affordances reported in the survey was removed through negotiation between the two coders.

RESULTS

The general survey

According to the survey responses, there were a number of learning opportunities that the participants claimed to have realized as affordances when they used GT in EFL writing. That is, the participants were provided with alternative words that they were seeking, grammatically correct sentences that they were working hard to write out, more sentence varieties that they were expecting to demonstrate, error-free mechanical details that they wanted to present, logical words that reminded them of heeding, and convenience that they were expecting. These leveraged learning opportunities can be summarized under such affordances as shown in table 2 including rich vocabulary choices, grammatical correctness, varied sentence patterns, better logical connection, error-free mechanics, and ease of use. Of these reported affordances, the former five are directly related to GT-generated versions while the last is concerned with the convenience of GT use in EFL writing.

Table 2: Descriptive data on the reported affordances

Affordances	HP's mentions (%)	LP's mentions (%)
Rich vocabulary choices	11 (100.00%)	9 (100.00%)
Grammatical correctness	5 (45.45%)	9 (100.00%)
Varied sentence patterns	10 (90.91%)	4 (44.44%)
Better logical connection	8 (72.73%)	3 (33.33%)
Error-free mechanics	3 (27.27%)	7 (77.78%)
Ease of use	9 (81.82%)	8 (88.89%)

As illustrated in Table 2, HP and LP participants experienced affordances similarly in terms of the affordance types. In line with the proportions of the mentions to the number of the participants, there were both similarities and differences in the affordances between HP and LP participants. For similarities, more than 80 per cent of both HP and LP participants experienced the affordances of rich vocabulary choices and ease of use. In addition to the two affordances, it was found that these participants leveraged all other types of affordances differently. Specifically, HP participants realized more such affordances as varied sentence patterns and better logical connection while LP participants experienced these affordances more including grammatical correctness and error-free mechanics.

The stimulated recalls

To further understand these affordances reported by students of varying English proficiency, the stimulated recalls were arranged among the selected case-study participants. During the recalls, the 3rd writing assignment was used as a stimulus to make the participants recollect the above-summarized affordances that they had or had not claimed to have realized. The results of the stimulated recalls were reported as follows.

Rich vocabulary choices

Rich vocabulary choices in GT use were a major affordance that all participants admitted having realized. According to the stimulated recalls, both HP and LP participants acknowledged the need for accruing more words and selecting contextually appropriate words, indicating that they were willing to use this learning opportunity to improve their EFL writing. When they were asked to recall how they used such a learning opportunity, differences were found between HP and LP participants. The HP participants used “some GT-adopted words proven to be better contextualized” (Shirley and Paul) to replace the corresponding words in their self-written versions. The LP participants admitted using some GT-generated words to replace self-selected words without confidence because “the GT-selected words were supposed to be better contextualized” (Linda and Leo). The differences demonstrated that the HP participants were more able to clarify the differences in the word choices between their own versions and the GT versions than their LP peers and thus they made better informed decisions when borrowing words from the GT versions.

Grammatical correctness

Analysis of the stimulated recalls revealed that the HP and LP participants had used the opportunity of learning from the almost grammatically error-free GT versions differently. In the HP participants' recalls, Shirley and Paul mentioned that “Grammar should not be a focus” since they had learnt all relevant grammatical points in high school. They just found a tiny number of grammatical errors after consulting the GT versions. Different from them, the LP participants attached great importance to grammar as Linda and Leo said “Grammar was one of the most important aspects of [English] writing”. Thus, they admitted that they made quite a few grammar-related revisions, although they were unsure about some revisions. These differences showed that HP participants had a good knowledge of grammar and they were less willing to realize this affordance of grammatical correctness. In contrast, LP participants were not good at grammar, but they were more willing to leverage this affordance than their HP peers.

Varied sentence patterns

In their stimulated recalls as to how they proceeded with varied sentence patterns, both HP and LP participants emphasized that they were willing to improve their sentence patterns in line with the GT versions as they considered sentence patterns as a symbol of advanced-level learners. The HP participants substituted several sentence patterns in their versions with the corresponding GT-used ones when they were sure that “these GT-used [sentence] patterns were better” (Shirley and Paul). The LP participants also made some revisions in sentence patterns. They located some complex sentences first in the GT versions and then replaced their own simple sentences. They admitted that they made some substitutions without figuring out the differences between the two versions. Overall, both HP and LP participants were willing to realize the affordance of varied sentence patterns, but the HP participants did it more effectively than their LP peers.

Error-free mechanics

In terms of the affordance of error-free mechanics, HP participants did not pay much attention to spelling mistakes and other typos and they treated such mechanical problems simply as careless mistakes. It should be noted that they treated a few wrongly used commas as grammatical errors in essence as they attributed such wrongly used commas to run-on sentences. They further emphasized that they were able

to recognize such errors “if they were careful enough” (Shirley and Paul). In contrast, the LP participants were willing to leverage this affordance and paid attention to mechanical problems. They admitted that getting rid of spelling mistakes, spacing problems and wrongly used punctuation marks was “an easy way for them to improve their writing directly” (Linda and Leo) although they were sometimes unsure about the accuracy of some punctuation-related revisions. Based on these results, although the LP participants were not as able as their HP peers to cope with the mechanical problems, they were more willing to realize this affordance of error-free mechanics.

Better logical connection

When further asked to recall their reported affordance of better logical connection, the LP participants admitted wanting to work on it, but they “did not give priority to it” (Linda and Leo) especially when they were required to finish revising their writing drafts in a given period. On the contrary, the HP participants paid much attention to the differences in the logical connection between their own versions and the GT versions. They made some revisions recognizing that some visible logical devices in English were unnecessary to be written out in Chinese sentences and thus they simply translated such Chinese sentences into English without making overt the hidden logical relationships. Meanwhile, they gave up using some logical devices from the GT version when they found that some logical devices used in the GT versions changed the ideas of their original Chinese sentences. In line with these recalls, both HP and LP participants were willing to realize the affordance of better logical connection, but the HP participants were more able to actualize it than their LP peers.

Ease of use

In the stimulated recalls, all participants found that GT worked so fast that it could generate corresponding English output within seconds. They also found that the interface of the web-based GT was user-friendly. When they moved the cursor to any translated sentence, both the source sentence and the target sentence were highlighted at the same time, which made it easy enough for them to make sentence-by-sentence comparison. As they expressed in the recalls, such characteristics made them willing to continue using GT in their EFL writing. From the recalls, all participants were able to perceive the convenience brought by GT use and they were willing to use it. The realization of the affordance of ease of use helped them further experience other types of reported affordances.

According to the analysis of the stimulated recalls on the reported affordances, it was found that there were some similarities and differences between HP participants and their LP peers. In terms of the similarities, both HP and LP participants were willing to

leverage such affordances as rich vocabulary choices, varied sentence patterns, better logical connection and ease of use, and they were able to leverage the affordance of ease of use. In terms of the differences, HP participants were more able to realize such affordances including rich vocabulary choices, grammatical correctness, varied sentence patterns, better logical connection and error-free mechanics while LP participants were more willing to leverage these affordances including grammatical correctness and error-free mechanics.

DISCUSSION

According to the general survey, the participants encountered multiple learning opportunities as affordances from GT use in their EFL writing as reported in table 2. It was found that not every participant realized the same identified affordances from GT use, indicating that affordances are not static features of the context but arise from participants’ interaction with their learning context (van Lier, 2004). In other words, the potential learning opportunities embedded in GT use did not automatically constitute affordances for every participant.

Also, it was presented in Table 2 that HP participants reported a much higher proportion of mentions in terms of varied sentence patterns and better logical connection than their LP peers. This result echoes the finding from the stimulated recalls that HP participants were more able to leverage such affordances. Meanwhile, as shown in the table 2, LP participants had a much higher proportion of mentions than their HP peers did in the affordances of grammatical correctness and error-free mechanics. This result corresponds to the finding from stimulated recalls that LP participants were more willing to actualize those affordances. These indicate that lack of either capabilities to perceive the learning opportunities or willingness to act upon them will make it less possible for students to realize them as affordances when they are using GT in EFL writing.

In addition, it was found in the survey that HP and LP participants reported similar proportions of mentions on such affordances as rich vocabulary choices and ease of use. This result agrees in part with the result from the stimulated recalls. In the recalls, both HP and LP participants were found to be able to and to be willing to use the convenience brought by GT use. With respect to the affordance of rich word choices, they were willing to leverage it, but LP participants were less able to do so and they admitted borrowing some words from GT versions without figuring them out. This indicates that when students are willing to leverage the affordances on GT use, their capabilities influence to what extents they can realize the affordances arising from GT use in EFL writing.

Taken together, except the affordance of ease of use, the HP and LP participants leveraged these reported affordances differently. It indicates that for one thing, learners' capabilities determine to what extents they are able to perceive the potential learning opportunities embedded in the context, and for another thing, learners' willingness influences whether they will act upon those opportunities or not. Only when learners possess capabilities and willingness can those potential learning opportunities be turned into affordances. Thus, the match between the potential learning opportunities and the participants' agency is of paramount importance for the opportunities to be actualized as affordances (van Lier, 2004). The better agency learners possess, the more potential learning opportunities they can realize as affordances.

These results shed some light on how to use GT or other similar MT tools to help students improve their EFL writing. Overall, using GT in students' EFL writing is recommendable in light of multiple potential learning opportunities embedded in GT use. However, students are different in their learner agency. Some are more able to perceive certain potential learning opportunities and some are more willing to act upon them when they use GT in their EFL writing. Thus, teachers are advised to provide different types of assistance and different amounts of assistance for students of varying learner agency. For those with poorer capabilities such as LP students, teachers can provide more assistance in terms of language and grammar. For those with less willingness such as HP students, teachers can convey to them the usefulness of realizing certain affordances. For those with less willingness such as LP students, teachers can help them recognize the usefulness of realizing certain affordances through providing them with linguistic assistance. In so doing, students' learner agency will be improved, more potential learning opportunities can be actualized as affordances, and the affordances can be realized to greater extents.

CONCLUSION

This study investigated the affordances that students reported in general and examined the similarities and differences in the affordances between HP and LP participants in specific. It was found that the potential learning opportunities did not automatically change into affordances for the students involved in GT use in their EFL writing. It was also revealed that the reported affordances were realized by students of varying English proficiency to different extents. Or rather, the realization of affordances is in relation to students' agency. In spite of the results, the affordances were not examined in terms of the revisions that students had made and the improvement that they had achieved in this study. Thus, future research can be done from such perspectives. Meanwhile, in light of the popularity of MT use among L2 students, more research in this field is needed to develop a more comprehensive understanding

of GT use among L2 students for one thing; the findings from such research can help teachers make better-informed decisions accordingly when they employ MT tools in their EFL writing class for another thing.

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Appendix A The general survey

What are the learning opportunities that you have recognized and have used when using GT in your EFL writing?

Appendix B The stimulated recalls

1. How did you deal with rich vocabulary choices from the GT versions?
2. How did you cope with the varied sentence patterns from the GT versions?
3. What did you do with grammatically correct sentences from the GT versions?
4. How did you treat error-free mechanics from the GT versions?
5. How did you handle appropriate logical connection from the GT versions?
6. How did you experience the ease of GT use?