USING THE 'NOTICE-THE-GAP' PRINCIPLE IN L1 TO L2 LEARNING IN TRANSLATION-ORIENTED FOREIGN LANGUAGE TEACHING

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Abstract. *Nowadays, translation into a foreign language (L2) has become a widespread practice. However, this type of translation is known to be more challenging than translation into the mother tongue (L1). This suggests that translation-oriented foreign language teaching should be geared towards equipping learners with the necessary knowledge, skills and abilities for performing L2 translation. One such aspect is creating a meaningful link between L1 and L2 equivalents and ensuring better retention, recall and retrieval of L2 vocabulary in response to L1 equivalents. The aim of this study was to test whether using L1 to L2 learning in combination with the 'notice-the-gap' principle in teaching vocabulary to trainee translators can facilitate the achievement of this result. The participants were thirty 3rd-year full-time translation students enrolled on a 5-year translation training programme at the Linguistics University of Nizhny Novgorod, Russia. The proposed approach was used in teaching vocabulary to an experimental group of students whose results before and after the treatment were compared with those of a control group using statistical tests. The results testify to the effectiveness of the proposed approach. The experimental group demonstrated a significant reduction in the performance time in L2 translation accompanied by improved accuracy of L2 use, i.e., retrieval of appropriate and adequate L2 vocabulary in response to their L1 equivalents. The findings have significant implications for translation-oriented foreign language teaching in terms of highlighting the importance of strengthening the L1 to L2 lexical link. On a practical level, the study provides specific recommendations and a learning procedure for achieving this aim.*

Key words: *L2 translation, translation-oriented foreign language teaching, L1 to L2 learning direction, 'notice-the-gap' principle*

1. INTRODUCTION

Nowadays, in many contexts translators must be able to work into their L2 as well as into their L1. It is an acknowledged fact that translation into L2 has become a 'normal and widespread' activity (Campbell, 1998; Pokorn, 2016), especially with 'minor' languages (McAlester, 1992) and in multilingual communities.

However, translation into L2 seems to be more challenging as research has demonstrated slower translation latencies and lower translation accuracy for the L1 to L2 direction (Kroll & Stewart, 1994). As stated in the Revised Hierarchical Model (Kroll & Stewart, 1994), the L1 to L2 lexical link in the mental lexicon tends to be weaker than the L2 to L1 link because L2 words are acquired by associating them with and mapping them onto their L1 equivalents. Even though this asymmetry may diminish with the increase in the learner's L2 proficiency (Kroll & Sunderman, 2003), it does not disappear completely.

In view of the above, foreign language training in translation and interpreting programmes should cater to students' future professional needs and be geared towards ensuring involvement of both the L1 to L2 and the L2 to L1 lexical links. However, it is often the case that learners successfully master L2 vocabulary but fail to promptly retrieve the target L2 vocabulary items in response to their L1 equivalents. We suppose that one of the ways to address this problem is to use the L1 to L2 learning direction in combination with the 'notice-the-gap' principle.

Despite controversy surrounding the use of L1 in an EFL classroom, there is evidence to suggest that L2 to L1 learning can be beneficial in that it (a) strengthens the L1 to L2 lexical link in the mental lexicon; (b) helps learners to make a conscious link between L1 and L2; (c) raises learners' awareness of crosslingual similarities and differences; (d) enhances L2 vocabulary retention, recall and retrieval.

As regards 'noticing the gap', it involves learners consciously noticing the mismatch between their own production in L2 and correct use of the target language in the input (Schmidt, 2001; Schmidt & Frota, 1986). In terms of vocabulary acquisition, it (a) draws learners' attention to gaps in their L2 knowledge; (b) makes them more motivated, focused and sensitive to the units of L2 language in the input; (c) promotes attention to form; (d) prompts the internalization of linguistic items; e) leads to learners restructuring their L2 knowledge.

To date, there has been no detailed investigation of the use of the above-mentioned approaches in teaching foreign languages to trainee translators. However, we believe that a combination of these approaches could significantly contribute to solving the problem identified earlier. Thus, we hypothesize that using L1 to L2 learning in combination with the 'notice-the-gap' principle in teaching vocabulary to trainee translators can result in creating a more meaningful link between L1 and L2 equivalents and ensuring better retention, recall and retrieval of L2 vocabulary in response to L1 equivalents.

2. THEORETICAL BACKGROUND

2.1. L1 to L2 learning

The L1 to L2 learning direction uses L1 units of language as stimuli while their correspondences in L2 are seen as target units. There is no consensus regarding the effectiveness of this learning direction. However, research has shown that compared to L2 to L1 learning it has demonstrated a superior learning effect (Webb, 2009), and is more effective in the longer term (Schneider, Healy & Bourne, 2002) and for higher-proficiency learners (Terai, 2021).

Indeed, the L1 to L2 learning direction is associated with a number of benefits for L2 acquisition. Firstly, it strengthens the L1 to L2 lexical link in the mental lexicon. Secondly, it creates an opportunity to raise learners' awareness of crosslingual similarities and differences

and to make a conscious link between L1 and L2. Thirdly, this direction involves translation into L2 which is successfully used in teaching English for general as well as specific purposes (Čarapić, 2022), and has been proven to:

(a) enhance L2 vocabulary acquisition and retention as it activates deeper levels of cognitive processing (Hayati & Mohammadi, 2009);
(b) ensure better recall (Lotto & De Groot, 1998);
(c) help learners to make a conscious link between L1 and L2 and ensure retention of L1 and L2 vocabulary items as translation equivalents;
(d) be useful in diagnosing students' language competences (Popović Pecić, Vlahović, 2021);
(e) highlight aspects of learners' L2 knowledge that require additional attention (Popović Pecić, Vlahović, 2021).

Another benefit is that the L1 to L2 learning direction creates a higher cognitive demand because retrieving the L2 equivalent of an L1 vocabulary item is a more challenging task and according to the retrieval effort hypothesis more difficult retrieval leads to better retention (Pyc & Rawson, 2009). Besides, it creates favourable conditions for a more effective retrieval of L2 items in response to L1 stimuli. As it follows from Tulving's encoding specificity principle (Tulving & Thomson, 1973), successful recall depends on the similarity of cues in the learning and the recall situations. Finally, it makes learners cognitively involved and provides a higher degree of task involvement which, as stated by Laufer and Hulstijn in their Involvement Load Hypothesis (Laufer & Hulstijn, 2001), also leads to higher vocabulary retention and better recall. We hypothesize that this can be achieved by using the 'notice-the-gap' principle.

2.2. Noticing in SLA

Noticing is one of the general psychological processes which contribute to the retention of words (Nation, 2001b), is seen by many researchers as "the gateway to subsequent learning" (Batstone, 1994, p. 100). It may be defined as "conscious registration of the occurrence of some event" (Schmidt, 1995: 29), and involves the learner paying attention and attending to specific units of the target language in the input.

According to the Noticing Hypothesis (Schmidt, 1990, 1995, 2001), noticing ensures that input becomes intake as it: (a) promotes attention to form; (b) contributes to the mapping of forms with their meanings; (c) makes 'noticed' units of language available for further processing (Schmidt, 1990); (d) prompts the immediate internalization of linguistic items (Iwanaka & Takatsuka, 2007); (e) helps learners to develop the ability to use linguistic items on their own (Iwanaka & Takatsuka, 2007). As evidenced by research, the absence of noticing on the part of the learner can render factors such as frequency of a language form in the input or teacher's corrective feedback ineffective (Schmidt & Frota, 1986).

2.3. Noticing the gap

For noticing to be conductive to learning it should involve learners consciously 'noticing the gap' between their own production in L2 and correct use of the target language in the input (Schmidt & Frota, 1986). This process is based on comparison and identification of a mismatch which can be achieved through intentionally directing learners' attention to specific units of language (Schmidt, 2001).

This can be done by creating a problem situation which highlights a gap in learners' L2 knowledge. Research has proven that it is a need to close a gap in knowledge that leads to learning, rather than simple exposure to input (Ellis, 1994), because 'realizing a problem triggers form-noticing' (Iwanaka & Takatsuka, 2007: 25), i.e., students will pay more attention to the input in an attempt to solve the problem.

One of the ways to create a 'problem' is through output. Output is seen by many researchers as an important factor in L2 acquisition (Izumi, 2002), due to its ability to promote noticing (Swain & Lapkin, 1995). The need to produce output: (a) forces learners to pay more attention to the linguistic means they need to express an idea; (b) highlights the gap in learners' knowledge, and (c) encourages the process of 'hypothesis formulation' (Swain, 1995). This, in turn, alters the way learners process subsequent input (Izumi & Bigelow, 2000). They:

(a) examine the input with more focused attention;
(b) are more motivated in their search which improves vocabulary retention (Laufer & Hulstijn, 2001);
(c) engage bottom-up processes which are not necessarily activated in comprehension and communicative activities (Thornbury, 1997);
(d) are predisposed to look out for specific units of language based on the gap in their knowledge;
(e) compare their existing interlanguage with the native-like language which forces learners to restructure their linguistic knowledge (Thornbury, 1997);
(f) are engaged as active participants in the learning process which makes it more effective (Johnson, 1988).

Overall, exposing learners to target language after attempts to produce it, rather than providing models of language use in the first place, seems to be a more effective strategy – it has "greater psychological validity" (Johnson, 1988), as it involves a conscious effort to figure out how to say things which is more effective than simply learning vocabulary from texts (De Sauze, 1959).

Developing the ability to notice the gap between the target language and their own interlanguage is especially important for advanced learners because they tend to:

(a) pay less attention to such mismatches due to increased self-confidence (Shin, 2010);
(b) ignore unfamiliar words if they are not essential for the understanding of the text (Keating, 2008; Kim, 2011).

3. METHODOLOGY

3.1. Participants

The participants were two groups of 3rd year full-time translation students enrolled on a 5-year translation training programme at the Linguistics University of Nizhny Novgorod, Russia with English as their L2 language and Russian as their native/L1 language. The groups included 14 (Group 1) and 16 (Group 2) students (30 overall) with comparable L2 proficiency; the students ranged in age from 19 to 20. The number of students in each group was determined by the student population on the programme and was not manipulated by us in any way.

3.2. Research design

Both groups followed the same syllabus for the 'English as a major foreign language' course which is divided into several vocabulary units. While we used the traditional L2 to L1 learning with both groups when teaching Unit 1, Unit 2 was taught differently. Group 1 (experimental group) followed the L1 to L2 learning direction in accordance with our hypothesis, while Group 2 (control group) followed the traditional L2 to L1 approach. We proceeded as follows:

(1) before reading the text, students were given sentences in their L1 containing L1 equivalents of target vocabulary items from this text (the items were italicized), the vocabulary items included single words or word combinations;

(2) students were asked to render these sentences into English (their L2); at this stage students were not allowed to use dictionaries;

(3) alternatives for rendering the ideas expressed by the unfamiliar vocabulary items were brainstormed and discussed;

(4) students read the text paying special attention to the L2 vocabulary used to render the ideas discussed in step (3);

(5) students matched L1 and L2 vocabulary items and wrote them down as pairs;

(6) students used L2 vocabulary from the text to render the sentences from step (1) into English;

(7) students compared their initial renditions with those given after reading the text.

When preparing materials for the task we proceeded from the assumption that:

(a) medium-sized texts are preferable (≈550-800 words), as using long texts may take too much of classroom time;

(b) the number of vocabulary units to be practiced in each particular case should not be overwhelming (≈10-15), and depending on the length and complexity of the text.

It is essential that the teacher ensures that the students understand the aims of the task as well as the logic and principles it is based on and the benefits it entails for their language training as future translators. Our learning procedure is consistent with Ellis's assumption that vocabulary retention requires the learner to: (a) notice it in the input; (b) compare it with the learner's typical output; and (c) integrate it into the learner's interlanguage (Ellis, 1994).

It also has the highest score on the task involvement index based on the Involvement Load Hypothesis (Laufer & Hulstijn, 2001). The hypothesis includes three components – need, search and evaluation – which are marked 0–2 depending on the degree of presence of each component in a given task: the absence is marked as 0, a moderate presence as 1, and a strong presence as 2 (Hulstijn & Laufer, 2001: 544). Each component of our learning procedure gets a maximum of 2, thus giving it the overall score of 6/6.

3.3. Data collection and analysis

This study uses a quantitative approach. To assess the effectiveness of the proposed approach and the validity of our hypothesis a pre-test and a post-test were conducted upon completion of Unit 1 and Unit 2 respectively. Taking into account the data that L2 translation is associated with slower translation latencies and lower translation accuracy, the tests aimed to assess the effectiveness and the speed of recall and retrieval of target L2 vocabulary items in response to their L1 equivalents.

The pre- and post-test followed the same procedure. The participants were given 20 sentences (234 words in the pre-test, 239 words in the post-test) in their L1, containing 36 L1 equivalents of L2 active vocabulary items. Other than that, the sentences did not contain any vocabulary or grammatical structures unfamiliar to the participants. The students were asked to translate the sentences using vocabulary from the texts they had studied. The task was performed orally and the students' responses were recorded. Informed consent was obtained.

To assess the speed of recall and retrieval we recorded the time (in seconds) taken by each student to perform the task. In terms of accuracy of the target L2 vocabulary use, students could get a maximum of 36 points – 1 point for each correct L2 equivalent. For each criterion the standard deviation was calculated and the mean and median values were found for each group of participants. Standard deviation was calculated to show the gap between the highest and the lowest data. As regards the mean and the median, they both measure the central tendency in a set of data. However, while the mean can be affected by values which are too high or too low, the median is not influenced by skewed distribution of data values or outliers. We used both measures to ensure that our measurements are not affected by skewed distribution.

To determine whether the data obtained were statistically significant, we used the Wilcoxon matched-pairs signed rank test to compare the pre-test and post-test performance of Group 1 and the Mann-Whitney U test to compare the post-test results of Group 1 and Group 2. The results are summarised in the tables presented in the following section.

4. RESULTS AND DISCUSSION

The pre-test results (Table 1) show no significant difference between performance of Group 1 and Group 2. As regards Group 2, there is a slightly more significant gap between the highest and the lowest data points for both performance time and accuracy of L2 use, as reflected by the standard deviation. This may suggest a wider variation in the participants' performance due to either slight differences in students' L2 proficiency levels or the character of the topic-related vocabulary. However, the mean and the median values for both groups are quite similar which means that the outliers have no significant influence on the central tendency.

Table 1 Pre-test results

	Group 1 (experimental group)			Group 2 (control group)		
	Standard deviation	Mean	Median	Standard deviation	Mean	Median
Performance time (sec)	75,8	390,9	397,5 ($\approx$ 6,6 min)	111,9	430,7	416 ($\approx$ 6,9 min)
Accuracy of L2 use	1,5	27,2	27,2	2,4	26,9	26,9

Post-test results show significant changes in the performance of the experimental group (Table 2). The performance time has decreased from 397,5 sec to 265 sec (median) while the results for the accuracy of L2 use have improved from 27,2 to 32,9 (median). The mean values are similar or identical to the median. These findings suggest that (a)

recall and retrieval of the target L2 vocabulary items take less time compared to the pre-test; (b) despite the reduction in performance time the quality of performance has improved resulting in retrieval of appropriate and adequate L2 vocabulary. This may suggest that L2 correspondences were closely associated with their L1 equivalents and were readily available for retrieval. This, in turn, may provide evidence for a stronger and more conscious link between L1 and L2 equivalents.

Moreover, the results seem to be more uniform as the standard deviation for Group 1 has significantly decreased from 75,8 to 52,46. It needs to be mentioned that the standard deviation for the accuracy of L2 use has increased marginally in Group 1 from 1,5 to 1,8 which could have been the result of a slightly wider variation in individual students' results compared to the pre-test. However, this had no significant effect on the mean and median values.

Table 2 Post-test results

	Group 1 (experimental group)			Group 2 (control group)		
	Standard deviation	Mean	Median	Standard deviation	Mean	Median
Performance time (sec)	52,46	267,5	265 ($\approx$ 4,4 min)	97,3	434,6	435 ($\approx$ 7,2 min)
Accuracy of L2 use	1,8	32,9	32,9	2	27,3	27,3

The results for the Wilcoxon matched-pairs signed rank test and the Mann-Whitney U test (Tables 3, 4) are statistically significant at $p < .05$ which suggests that the observed changes are valid and testify to the effectiveness of the proposed approach. More specifically, they provide statistical proof for the: a) improved performance of Group 1 after the practice (Table 3); b) observable differences between post-test performance of Group 1 and Group 2 (Table 4). The fact that the value of W for the accuracy of L2 use is 0 reflects the absence of negative ranks, i.e., none of the participants in Group 1 demonstrated a decrease in the accuracy of L2 use compared to the pre-test results.

Table 3 Comparison of pre- and post-test results of Group 1
(the Wilcoxon matched-pairs signed rank test)

	W-value	Critical value	Result
Performance time	1.5	for W at N = 14 ($p < .05$) – 25	W < critical value result is significant at $p < .05$
Accuracy of L2 use	0	for W at N = 14 ($p < .05$) – 25	W < critical value result is significant at $p < .05$

Table 4 Comparison of the post-test results of Group 1 and Group 2
(the Mann-Whitney U test)

	U-value	Critical value	Result
Performance time	41.5	for U at p < .05 – 64	U < critical value result is significant at p < .05
Accuracy of L2 use	5	for U at p < .05 – 64	U < critical value result is significant at p < .05

Overall, it can be concluded that the findings illustrate an improvement in the performance of the experimental group (Group 1) which testifies to the fact that the proposed approach to working with L2 vocabulary can ensure its better retention, recall and retrieval in the L1 to L2 direction.

5. CONCLUSION

The aim of this study was to test whether using L1 to L2 learning in combination with the 'notice-the-gap' principle in teaching vocabulary to trainee translators can result in creating a more meaningful link between L1 and L2 equivalents and better retention, recall and retrieval of L2 vocabulary in response to L1 equivalents. Overall, the evidence from this study testifies to the effectiveness of this approach. In particular, the findings suggest that:

(a) after the practice the participants from the experimental group were able to access the correct L2 vocabulary items more easily and in less time than previously;

(b) the L1 equivalents effectively activated the target L2 vocabulary.

Thus, it may be concluded that learning vocabulary through (a) identifying a gap in learners' L2 knowledge by creating a need to render into L2 certain ideas expressed in L1; (b) filling this gap by consciously looking out for the corresponding units of language in L2 input; (c) integrating new L2 vocabulary items into students' interlanguage can contribute to establishing a stronger and more conscious link between L1 and L2 thus ensuring faster recall and retrieval of L2 linguistic means in the L2 translation. In the translator training context this can be essential as translators need to be able to operate out of their L1.

However, there are some considerations to take into account. Firstly, this can mean additional adjustments, changes, or modifications on the part of the teacher. The implementation of the proposed approach will require certain changes to the teaching process and lesson planning, as well as development of new teaching and learning materials. On the one hand, this can make additional demands on teachers' time. Besides, introducing new teaching techniques often means discomfort and unexpected situations in the classroom which will have to be dealt with. It can also lead to disruptions in lesson plans or require deviations from them as new tasks may take more time than expected.

One more consideration is related to the learning procedure itself. Students may try to skip steps 2 and 3 which involve attempts to render L1 sentences into English and discussion of the possible renditions and go straight to step 4 in order to simply find in the text the L2 equivalents for the L1 vocabulary items. However, it is noteworthy that the mental effort involved in figuring out how to say things before being exposed to the target language in the

L2 input is a valuable element of the task, so care should be taken to ensure that students follow all the steps of the procedure.

In addition, learners' attitude may be of concern. Students may be unwilling to give up traditional learning procedures in favour of a new one which is (a) unfamiliar; (b) may require a higher level of effort; (c) will require time to master; (d) may yield disappointing results due to lack of prior experience.

This study may be subject to the following limitations. First, a larger sample could have been used to ensure more representative results. Second, quantitative approach could have been supplemented with collection and analysis of qualitative data (e.g., student survey) to gain a better insight into the benefits and difficulties associated with the proposed approach.

Further research could focus on overcoming the above-mentioned limitations in order to provide a comprehensive understanding of the issue under discussion.

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