

Written languaging, reformulation and EFL learners' writing accuracy

EHSANOLLAH AZIMIAN

Payame Noor University, Iran.

AFSAR ROUHI

University Of Mohaghegh Ardabili, Ardabil, Iran

MANOUCHEHR JAFARIGOHAR

Payame Noor University, Iran

Received: 20/02/2022 / Accepted: 08/12/2022

DOI: <https://doi.org/10.30827/portalin.vi40.23981>

ISSN paper edition: 1697-7467, ISSN digital edition: 2695-8244

ABSTRACT: This study examined the effect of written languaging and reformulation on intermediate university students' writing accuracy during a three-stage writing task. Sixty-six EFL Iranian B.A. students in 2019 were required to write a composition, compare their drafts with feedback provided in the form of reformulation and rewrite their original texts. Students' performance in the form of compositions, revisions and written languaging episodes (LREs) were used as the data for studying the potential positive effect of reformulation and languaging on the improvement of writing accuracy. The results support previous research findings on the positive effects of languaging as well as reformulation indicating a significant decline in the number of errors from original drafts to the immediate revisions both within experimental groups and across the control group and experimental groups as well as between the contrast group and the experimental group. The role of reformulation alone and reformulation plus written languaging in mediating the improvement of writing accuracy of the learners along with theoretical and pedagogical implications will be discussed.

Key words: languaging, reformulation, writing accuracy, sociocultural theory, mediation

Lenguaje escrito, reformulación y precisión de la escritura de los estudiantes de inglés como lengua extranjera

RESUMEN: Esta investigación analizó el impacto del lenguaje y la revisión en la precisión de la de estudiantes universitarios a lo largo de una tarea de escritura de tres pasos. Para completar su EFL iraní B.A. requisitos, sesenta y seis estudiantes tuvieron que redactar un ensayo, comparar sus primeros manuscritos con comentarios reformulados y luego revisar sus trabajos originales. Los posibles beneficios de y el lenguaje para mejorar la corrección de la escritura se investigaron utilizando datos de rendimiento de estudiantes de composiciones, revisiones episodios de lenguaje escrito (LRE). Los hallazgos confirman investigaciones anteriores los beneficios tanto de la traducción como de la reformulación, mostrando una marcada disminución de errores los primeros borradores hasta las revisiones dentro los grupos exploratorios y entre el grupo de y los grupos experimentales, además de entre el de contraste y el grupo exploratorio. Hablaremos sobre las consecuencias teóricas y prácticas del papel que juegan la reformulación y la reformulación combinada con el lenguaje escrito para facilitar el crecimiento de los alumnos en la corrección de la escritura.

Palabras clave: lenguaje, reformulación, agudeza de escritura, idea sociocultural, mediación.

1. INTRODUCTION

Learning and verbalization have been demonstrated to be closely related. During the last 20 years, it has been demonstrated that languaging in the form of collaborative dialogue mediates L2 learning (e.g., Brooks & Swain, 2009; Swain & Lapkin, 2002, 2007). For example, the effect of oral and written languaging on improving the writing accuracy of EFL learners has been continuously studied by many researchers inspired by Vygotsky's sociocultural theory of mind (Fukuta et al., 2019; Ishikawa, 2013 & 2015; Moradian et al., 2015; Suzuki, 2009 & 2012). Languaging refers to the output language learners produce and reflect on while performing linguistic tasks. Specifically defined, languaging is "the process of making meaning and shaping knowledge and experience through language" (Swain, 2006, p. 95).

Although oral data forms the primary source for languaging in the majority of previous studies, it is not merely restricted to oral modality but has been practiced in writing as well; Suzuki (2009, 2012), for instance, introduced written languaging into the field of second language acquisition research. Suzuki (2012) investigated whether languaging about direct correction on linguistic errors in learners' first essay could help them successfully correct those errors during immediate revision. Later, Moradian et al. (2015) tried to improve over Suzuki's study by including a control group in addition to the languaging condition. They examined the effect of direct written corrective feedback alone and also its effect together with written languaging when doing dictogloss tasks.

Meanwhile, reformulation has been investigated to find connections between learners' noticing and subsequent uptake of lexical and grammatical features (Adams, 2003; Qi & Lapkin, 2001). It is defined as a WCF technique whereby the learner's original text is re-written by a native speaker or a teacher, maintaining the ideational content but correcting grammatical, lexical, cohesive and stylistic problems (Levenston, 1978; Cohen, 1982), preserving the learner's ideas and making it sound as nativelike as possible. Effort is made for the reformulations to be specifically tailored to learners' own writing, in this way they are thought to process the feedback more deeply, actively deliberating on incorrect language use and seeking out solutions for them. They tend to focus on the alternatives suggested in the reformulated text (Coyle et al., 2020). An instrumental role is assumed for reformulation to play in promoting accuracy of the learners' subsequent writings (Qi and Lapkin, 2001).

To the best of our knowledge, reformulation has not been investigated in association with written languaging. Due to its widely recognized effectiveness (Ibarrola, 2013), we expected that its combination with written languaging would reinforce the beneficial effects in both of them contributing to the development of linguistic accuracy. Therefore, attempting to open a new dimension in the field of written languaging and contributing to its positive effects on L2 learning, the present study intended to probe into the effectiveness of reformulation in students' writing accuracy by assigning a contrast group as reformulation condition and compare it with an experimental group as written languaging condition while comparing the performance of participants in both groups with a control group. The following research questions are going to be answered through the study:

RQ 1: Does provision of reformulation followed by written languaging and reformulation without written languaging on the part of EFL learners have any significant effect on improving grammatical accuracy measured by revision tasks?

RQ 2: Is there a significant difference in the effect of reformulation accompanied by written languaging and reformulation on improving grammatical accuracy measured by revision tasks?

1.1. Written languaging: a theoretical account

From a sociocultural perspective, it is argued that learners, in their smooth progression from object/other regulation to self-regulation, need assistance of some capable others and perhaps experts. The Vygotskian concept of the zone of proximal development indicates the difference between what one can do alone and what s/he can with the assistance from an expert (Brooks & Swain, 2007). As Vygotsky (1978) holds, learning is originally shaped and constructed through social interaction with more capable others in our surrounding and then we can bring this co-constructed knowledge under our control and use it autonomously in other contexts. The process, known as internalization, occurs at two levels: interpersonal (i.e., assisted performance) and intrapersonal (i.e., self-directed performance) (Lantolf & Thorne, 2006). Language is considered one of the important tools in playing a key role in internalization, particularly internalizing language itself. Therefore, investigating “how language serves to mediate human activity both on interpsychological plane in the form of social speech (and/or writing) and on intrapsychological plane in the form of private speech (and/or writing)” has received noticeable attention by SCT (Dicamilla and Anton, 2004). Private speech and written languaging has been claimed to share a lot of similarities (e.g., Roebuck 2000; Lee 2008) and in Suzuki’s (2012) opinion written languaging is an equivalent to private speech, but in writing.

Sociocultural theory claims that cognitive development is fundamentally a socially mediated process in which the mediational link between the social and mental worlds is provided, in large part, by language, as it evolves from social to inner speech. Once social speech develops into inner speech and goes underground, it does not remain underground permanently; rather, it often resurfaces as private speech in problematic circumstances. Thus, private speech as well as private writing, as Dicomilla & Lantolf (1994) point, appear when one is faced with a complicated task interfering in the way to self-regulation. Private speech can be described as articulating one’s thoughts to regulate an activity at one’s hand. Accordingly, Ohta (2001) defined it as an audible speech addressed to oneself intended to help the person gain further mastery of a skill not fully learnt or to resolve a problem. Similarly, private writing was conceptualized as “the written externalization of portions of one’s dialogue with the self” by Dicomilla & Lantolf (1994).

It has been argued that, through deliberate/active engagement in verbalization and self-explanation, L2 learners are enabled to detect gaps (i.e., inconsistencies and disparities between learners’ interlanguage and the target language) and holes (i.e., lack of knowledge and need for learning about some features of the target language) in their performance and subsequently gain a better position to bridge them (Swain et al. 2009). Similarly, it is argued that languaging can either consolidate the acquired knowledge or trigger learning new knowledge (Brooks et al. 2010; Knouzi et al. 2010; Swain 2006, 2011).

Theoretically speaking, languaging in its oral and written modes might have a comparable mechanism, in that learners externalize their thoughts with language. However,

two potentially facilitative features can be considered as exclusively inherent to written languaging (Ishikawa, 2018). First, the products of written languaging can serve as more convenient permanent records than those of oral languaging, as they are more accessible and do not require any additional recording devices. Therefore, they can be reflected on repeatedly by learners whenever and wherever they are. Second, although research findings suggest that learners benefit more when they work with peers in a collaborative manner than when writing individually (Storch, 2013), engaging in written languaging individually in the absence of interlocutors can also be advantageous, in that learners can focus solely on the act of written languaging at their own pace, usually under minimal time constraints (Williams, 2012).

2. METHOD

2.1. Participants

The participants of the present study were 66 Iranian university students studying English as a foreign language for B.A. degree in Payam-Noor University, Ardabil, Iran during the spring semester, 2019. In order to make sure that the participants were homogeneous in terms of their language proficiency, Oxford Placement Test was administered and only students scoring at intermediate level (47 out of 70) were included in the study; more details are provided in the materials section. The participants were all female ranging from 19 to 24 years old. They had been studying English for at least 7 years at school before entering university. They attended their regular classes (one session per week) during which the treatment and data collection sessions were held. The classes were taught by the first author. The participants were randomly assigned to three groups, two experimental groups (reformulation plus languaging (RE + WL, n=22), reformulation (RE, n=22) functioning as the contrast group), and one control group (CG, n=22).

2.2. Materials and Instruments

2.2.1. English proficiency test

Oxford Placement Test with reasonable measures of reliability ($\alpha=0.9$) and validity was used to make sure that the groups were homogeneous in terms of their language proficiency. The test comprises three sections, namely grammar and vocabulary (45 items), reading comprehension (10 items), and writing a short letter.

2.2.2. Test of writing accuracy

All the participants wrote an original composition during the study. Their first composition served two functions. In addition to being used as their first performance, it was also used as the pretest to determine participating groups' homogeneity in terms of their writing accuracy which is the dependent variable.

2.2.3. *Writing prompt*

One composition was written by the participants along with a revision of their first composition. The writing prompt was chosen from a course-book intended for getting prepared for IELTS writing (Panahi, 2016: 238): “People attend college or university for many different reasons (for example, new experiences, career preparation, and increased knowledge). Why do you think people attend college or university? Use specific reasons and examples to support your answer.” The reason behind choosing the prompt used in the study was that the researcher had already used similar topics in his writing courses as the lecturer and the students of almost the same proficiency level had no difficulty writing on such topics.

2.2.4. *Languaging prompt*

The participants in the WL+RE group, on their second session, were given a languaging prompt in their mother tongue, Persian “Your original writing has been reformulated. Please study the reformulated text carefully and compare it with your own writing and try to detect any changes made in your writing such as changing made in vocabulary and grammatical forms like third singular s, plural s, articles, and etc. Then, on the extra sheet of paper provided, write the reasons for which you believe some part of your text has been changed.”

2.3. Procedure

The study lasted for two sessions. The participants were enrolled in basic writing courses taught by the first author. On their first session, the participants in RE+WL group were asked to write a short essay, in 30 min, based on a writing prompt (described in materials section). At the end of the time allotted, the participants’ sheets were collected and before correcting the essays an extra copy were made of them. Then, the essays were reformulated by the researcher. The procedure followed in reformulating the participants’ writings was derived from the procedures provided by Cohen (1983) and Thornberry (1997); i.e., rewriting and typing the whole composition sentence by sentence without changing the original ideas and content to make it as native-like and error-free as possible. The corrections were done in two aspects: choice of vocabulary and grammatical accuracy. On the second session (one week later), the participants were provided with their original essays along with a typed reformulation of their essays. They were instructed to compare the two versions in order to notice the differences and to identify their errors. As an example, consider a participant’s written languaging episode (WLE) on a reformulation of her sentence:

Example 1: *lexis-based WLE*

The original sentence “... it can be followed by a new changes in many surfaces...”

The reformulated sentence “... it can also be followed by a new change in many aspects...”

Written languaging episode: “I thought the words surface and aspect to have the same meaning. But it is not like that. They can have the same meaning in Persian,

but not in English. Surface means outer part of an object but aspect means one part of a situation, idea, plan, etc. that has many parts.”

The revised sentence “... It can also be followed by a new change in many aspects such as the changes in life style, behavior, ideas, plans, and so on.”

Example 2: *grammar-based WLE*

The original sentence “... They are not basic ones...”

The reformulated sentence “... They are not the basic ones...”

Written languaging episode: “in my opinion, basic ones is pointing to a specific thing so we should add the article the”

The revised sentence: “They are not the basic ones”

Once they were done with the comparison, they were asked to perform a written languaging task during which they explained to themselves and wrote down their self-explanations on a separate piece of paper (in Persian); i.e., their reasons for the noticed errors in their writings. They were also asked to write down the linguistic forms (both lexis and grammar) that they had recognized as errors although they didn't know the exact reasons. The sheets containing the participants' comments and explanations were collected and then, they were given their original essays and were asked to revise their writing and rewrite their original composition.

The participants in the reformulation group were given the same writing prompt as for RE+WL on their first session to write a short essay in 30 min. At the end of the time allotted, the participants' sheets were collected and before correcting the essays, an extra copy were made of them. Then, the essays were reformulated by the researcher as described above. On the second session (one week later), the participants were provided with their original essays, along with a reformulation of their essays. They were asked to compare the two versions in order to notice the differences and to identify their errors. Once they were done with the comparison, they were given their original essays and were asked to revise their writing and rewrite their original composition.

The participants in the control group, however, were given the same writing prompt as for experimental groups on their first session to write a short essay in 30 min. One week later, they were provided with their original essays and were asked to revise their essays trying to correct their errors.

2.4. Data Analysis

The data in this study consisted of two parts: data related to the compositions and those related to the WLEs. Regarding the essays, following Suzuki (2009; 2012), the accuracy of the writings was appraised by the normalized error score; this score is calculated by dividing the number of errors in a composition by the number of the words in a composition and, then, it is multiplied by the average number of words in all compositions. Hence, the number of the words and errors produced by each participant were recorded per composition; then, the average number of the words for each group was calculated and the normalized error score was appraised by using the following formula:

$$\begin{aligned} & \textit{The normalized error score} \\ &= \frac{\text{the number of errors in a composition}}{\text{the number of the words in a composition}} \\ & \times \text{the average number of the words in each group} \end{aligned}$$

To answer the first research question, i.e., determining the difference across the subsequent performances of each group, the non-parametric test of Wilcoxon signed rank test was used. This non-parametric test was used because of two reasons. Firstly, two sets of scores were taken from the same group. Secondly, a paired sample t-test is commonly used for a normal sample size (30); since the number of participants in each group was below 30 an equivalent non-parametric test of Wilcoxon signed rank test was chosen. To assess the difference in the performances across the groups, second research question, Kruskal-Wallis test, an equivalent non-parametric test for one-way ANOVA, was utilized. The reason for choosing this test was that the size of the samples was below the normal sample size, 30.

3. RESULTS AND DISCUSSION

3.1. Results

Compositions written by the participants in three groups were all corrected by the first author. As explained in the data analysis section, the writing accuracy of the essays was appraised by the normalized error score. To achieve the error score for each participant, the number of errors in a composition was divided by the number of the words in that composition and, then, it was multiplied by the average number of words in all compositions in the group. This set of data was required to analyze the scores quantitatively and to answer the research questions.

Concerning the procedures used to correct the essays some points need to be mentioned. The original and revised compositions written by the participants were corrected in terms of grammatical accuracy and lexical accuracy. Any incorrect use of the structures including subject-verb agreement, singular/plural use of the verbs, use of the articles, sequence markers, tenses were considered as error. Furthermore, any incorrect use of a word in terms of its appropriate meaning in its immediate context or its improper use in a related collocation was considered as error. Then, taking into account the writer's intention and ideas, a whole sentence was reformulated so that the sentence looked as correct and nativelike as possible grammatically, lexically, and cohesively, while preserving the writer's ideas and ideational content. (see appendix for a sample of an original composition, its reformulation, and revised essay).

To answer the first research question, i.e., the probable positive effect of reformulation and reformulation plus languaging on the participants' level of accuracy from their first composition to their revised composition, their performance was evaluated in their writings through counting the number of the words and errors for each individual composition as well as the total number of the words for each group. This provided a normalized error score for each participant applying the formula presented above.

Then, to compare the accuracy and the probable improvement in the participants' performance on their revised compositions over their original compositions, three Wilcoxon signed rank tests were conducted on the normalized error scores within the individual experimental, contrast, and control groups and across their subsequent writings. The reason for choosing this non-parametric test was two-fold: the number of the subjects in each group was below 30 and the performance of the same group was compared on two occasions. Results of the test for the reformulation plus written languaging group revealed a significant difference between the participants' error scores of their original and revised compositions, $z = -4.109$, $p = 0.00$. As shown in Table 1, lower normalized scores were generated in the revised compositions ($M = 4.92$) than those for the original compositions ($M = 16.00$). This indicates a significant decline in the number of errors from the pre-test to the post-test.

Furthermore, results of the test for the only reformulation group indicated a significant difference between the errors produced in original and revised compositions, too, $z = -3.750$, $p = 0.00$. As indicated by descriptive statistics appearing in Table 1, a significant reduction can be observed in the mean of the normalized error scores for the original ($M = 15.48$) to that for the revision drafts ($M = 8.04$). It can be argued, then, the differences between two sets of scores for both groups were significant and meaningful.

However, the results of the Wilcoxon signed rank test in the control group indicated no significant difference between the participants' error scores in their original and revised compositions, $z = -.934$, $p = .350$. Table 1 summarizes the average number of errors produced in each group. It clearly shows how lower normalized error scores were produced in revised compositions compared to those in original compositions for both experimental groups, whereas the number of errors didn't change significantly for the control group.

Table 1. *Descriptive and Inferential Statistics for RE + WL, RE, & CG*

	CG	RE	WL+RE
Average number of words	169.45	169.45	181.81
Average number of NES(SD) in original compositions	16.04(8.42)	15.48(4.03)	16.00(4.73)
Average number of NES(SD) in revised compositions	16.81(8.16)	8.04(3.25)	4.92(3.24)
Z	-0.934	-3.750	-4.109
P	0.350	0.00	0.00

To answer the second research question, i.e., to compare the effectiveness of reformulation plus written languaging as well as that of reformulation alone on improving the writing accuracy over the revision task, we needed to compare the difference in the performance across the experimental and control groups. Initially, the normalized error scores of the pre-tests for the three groups (the NESs for the participants' original compositions) were compared to prove that the participants were homogeneous in terms of the dependent variable, writing accuracy. To this aim, Kruskal-Wallis test, an equivalent non-parametric test

for one-way ANOVA, was utilized based on the reasons explained above for the Wilcoxon test. The results of the test, as depicted in Table 2., revealed that no significant difference was found between the groups in terms of the average error scores of the three groups, $H=0.37$, $p=0.82$. Thus, it means that the difference in the pre-tests could not function as a covariate significantly affecting the post-test outcomes. Figure 1., produced by the statistical software GraphPad Prism 9, illustrates the difference in the performance of the participants in their first composition functioning as the pre-test.

Table 2. *Inferential Statistics for Comparing Pretests and Posttests*

TEST	KRUSKAL STATISTIC	P
Pretest	.37	0.82
Posttest	31.43	0.0001

Then, to discover any potential changes in the revised compositions, the normalized error scores of the post-tests in three groups were compared. Since there was no post-hoc test for the Kruskal-Wallis test in SPSS, Kruskal-Wallis test followed by Dunne's multiple comparisons test was performed using GraphPad Prism, version 8.0.0. The results of the Kruskal-Wallis test as shown in table 2 revealed a significant difference between the three groups in improving the grammatical accuracy over the revised composition, $H=31.43$, $P=0.0001$. Applying the Dunn's test of multiple comparisons indicated a significant difference between the individual groups, too. That is, not only there was a significant difference between WL+RE and control group, Mean Rank Difference = -32.39, Adjusted P Value ≤ 0.0001 , and a significant difference between RE and control group, Mean Rank Difference=-17.66, Adjusted P Value ≤ 0.006 , but also there was a significant difference between WL+RE and only RE, Mean Rank Difference = -14.73, Adjusted P Value ≤ 0.032 . Table 3 summarizes the results.

Table 3. *Dunne's Multiple Comparison Test*

	MEAN RANK DIFF.	SIGNIFICANT?	SUMMARY	ADJUSTED P VALUE
WL+RE vs. CG	-32.39	Yes	****	≤ 0.0001
RE vs. CG	-17.66	Yes	**	≤ 0.006
WL+RE vs. RE	-14.73	Yes	*	≤ 0.032

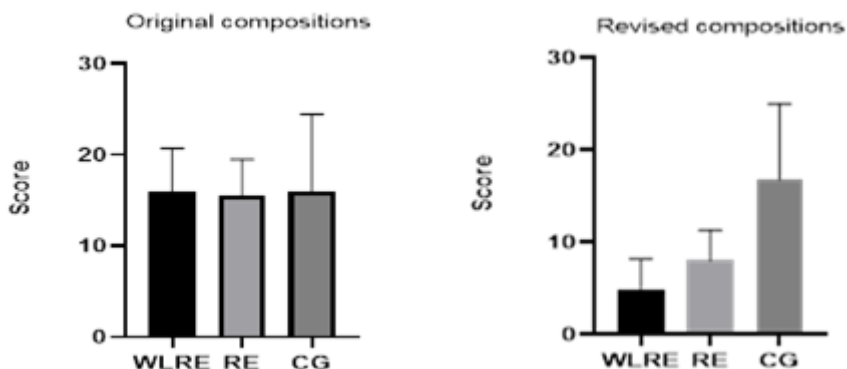


Figure 1. comparison of the scores between the original and revised performance

The second part of this section concerns with a qualitative analysis of the LREs or as we call it here WLEs. It should be pointed out that only WL+RE group was required to produce WLEs. Analyzing the WLEs produced by the participants revealed some patterns in the type and quality of the WLEs. First, WLEs tended to fall into two major categories. About 66.6% of the WLEs were devoted to grammatical problems and only 33.4% of them were related to lexical errors.

The reformulations contained discursive elements including, for example, sequence markers. However, they were scarcely noticed by the participants and subsequently were not incorporated in their revisions. Therefore, it might seem that learners at this level of proficiency tend to notice the most to grammatical and lexical differences (examples of the related previous studies are cited above) employing the noticing strategy as referred to by Coyle & de Larios (2020); i.e., identifying the linguistic differences between their own texts and reformulations.

Regarding the punctuations and mechanics of paragraph writing, it can be inferred from the revisions that students not only noticed and revised their grammatical and lexical mistakes and errors but also modified their sentences in terms of the use of capital letters, commas, and periods, appropriately.

Another revealing pattern was that not all the WLEs were true in terms of English grammar or vocabulary although the correct forms suggested in the reformulations were accepted and incorporated in the revisions. Consider the following example: the participant tries to justify her own choice while the explanations are not acceptable.

Original sentence: “But since they get introduced with the society’s condition, they start to comparison their dream with reality....”

Reformulation: “ But as soon as they get introduced with the society’s condition, they start to compare their dream with reality...”

WLE: ‘As soon as’ is an idiom and has high usage. By comparison I don’t mean ‘compare’ or ‘contrast’ but rather ‘accord’.

Revised sentence: “ But as soon as they get introduced with the society’s condition, they start to compare their dream with reality...”

Still one more emerging pattern was that in the reformulations made in some instances for the word choice, the participants simply accepted the equivalents suggested by the reformulator while the explanations given as WLE were not acceptable and didn't contain any self-expression. This might suggest that they were able to comprehend the appropriateness of the given equivalents and, therefore, the suggested structures or words formed only part of their receptive knowledge. An example with a few errors may clarify the point.

Original sentence: "All people in a period of time of their life, will Pass the exam

Reformulation: "Everybody in one period of his/her life will have to pass the university entrance exam. People vary in their reasons for going to university."

WLEs: 1. "It's better to use "Everybody" when we want to start a total sentence."

2. "it's true when we want to mean "کسي" (meaning one in Farsi)."

3. "I think it's better to use will have pass."

This being said, there were instances where the participants insisted on their own text justifying their own choice and not approving the reformulator's. Still there were others who claimed in their reactions to the corrections that they had made mistakes because of time pressure and lack of sufficient time. This indicates that the learners themselves decide whether to accept and use the provided correction or not. Consider the following example.

Original sentence: "...they want to start new job and make money for other and themselves."

Reformulation: "... they want to start a new job and make money for themselves and others."

WLE: "by courtesy we always write other first and after that we write ourself."

Despite the fact that the participant has incorporated the corrections in the revision, her interlanguage was manifested through expressing her own views.

An interesting thing happened to one of the participants that may be called as insight happened to her. She has written her WLEs in a way as if requested to write a letter instead of explanations. She wrote that once she studied the reformulations, she came to understand her mistakes and the rules of writing. She believed that before that, while writing, she used to translate verbally from Persian sentences and phrases into English. For this reason, she didn't use to pay attention to using words and collocations such as "everyone" which she used to say "each people" or "through" which she used to write "from". So, by reviewing the reformulated sentences, she came to realize the correct use and collocations of words.

Overall, although the majority of the errors were noticed at the comparison stage, 74% of them were successfully incorporated into their revisions. However, there were errors observed at the pretests that were still present in the posttests. Therefore, it might be concluded that the uptake did not fully occur. Consider the following example.

Original sentence: "In sum, unemployment delay the development of society..."

Reformulation: "In sum, unemployment postpones the development of a society..."

Revised sentence: "In sum, unemployment postpone the development of a society..."

WLE: delay which means ‘to be late’ (translated from Farsi) cannot be not used in this sentence and postpone should be used which means ‘make an event happen later’ (translated from Farsi).

As can be noticed, the participant has noticed and revised the correct use of the verb delay and has replaced it by postpone while she has not made any change in using the article before society. The same thing happened for some other structures when learners use them in new sentences although those forms were corrected by the reformulator.

3.2. Discussion

The findings support the results of previous studies on both reformulation (e.g., Sachs and Polio, 2007; Storch and Wigglesworth, 2008) and written languaging (e.g., Suzuki, 2009, 2012; Moradian, 2015). Closely related to the findings of the present study, i.e., the beneficial effects of written languaging on improving the writing accuracy were reported by Suzuki (2012) and Moradian et al. (2015). In both of them, written languaging helped learners increase their understanding of linguistic problems so that they reflected deeply on the linguistic forms they knew partially and reconsidered their knowledge. Thus, participants were encouraged to use the correct forms in their revisions. It is fair to suggest that the present study extended the findings of researches previously conducted on not only oral languaging but also written languaging. Therefore, reformulation can also be utilized like direct WCF paired with languaging in order to reinforce the noticing in the learners and help them identify the gaps and reconsider their IL to get as close as to nativelike forms.

Meanwhile, the study included an only reformulation condition labeled contrast group. The results evidenced a significant improvement in writing accuracy for this group as well. Reformulation, functioning as an effective mediatory tool, could help reduce the number of the participants’ errors from their original to the revised text. One reason for the effectiveness of the reformulated text improving participants’ writing accuracy could be attributed to the role reformulation plays in pushing the learners to notice the gaps in their second language production (Adams, 2003; Sachs & Polio, 2007; Swain & Lapkin, 2002); hence, it can be considered a successful revising tool assisting learners to rectify errors in their original writings.

As already noted, written languaging about reformulation by learners was conducive to grammatical accuracy of their initial writings over their revisions. The findings depicting the significant improvement in accuracy in response to the reformulated text can be attributed to the fact that written languaging might have sharpened L2 learners’ understanding of their initially committed errors in a way that they could decrease substantially the number of errors from their original performance to the second performance, i.e., revision. As Suzuki (2012) argues, this improvement in accuracy can be traced in the opportunity given to the learners through the association of reformulation and written languaging to contemplate on their errors and thereby explore the reasons why they occur. Consequently, a higher awareness of those errors could have been obtained. So, in this way the learners were scaffolded in the transfer of the newly constructed knowledge obtained through reflection and reconsideration of their IL to writing the revision task. The raised awareness provided the learners with a venue, as Schmidt (1990; 2001) claims, to convert input into intake. The findings are also in line

with Storch and Wiggleworth's (2008) study arguing that the participants' performance in the revision task was significantly improved due to the opportunity given for orally verbalizing their reflections about a reformulated version of their original composition with their partners.

It might further be argued that having explained and written down the reasons behind the errors, learners were assisted of attending to the grammatical features and thereby endow their focal attention a golden chance to register the noticed forms. In other words, while in such an occasion, the learners are persuaded through written languaging to pay special attention to the target forms. Consequently, they figure out the underlying structure of the errors. In fact, the learners were driven to deepen their awareness and turn it into attention at the level of understanding or rule formation (Schmidt 2001). Furthermore, through written languaging and writing the reasons for errors, learners' consciousness was sharpened so that they noticed some particular linguistic features. In fact, such a deeper understanding was built in learners that they were able to check their existing knowledge. This led to reshaping or even consolidation of the existing linguistic knowledge and detecting the gaps in their own current knowledge (Brooks et al. 2010; Knouzi et al. 2010; Suzuki 2012; Swain 2006, 2011).

The findings also suggested that getting learners involved in written languaging in response to reformulation was more effective than reformulation alone in improving writing accuracy over the revision task. The favorable results for the WL+RE group over the only reformulation group seem to indicate that the languaging they produced in doing their task benefited them through both the process and product. In terms of the process, three factors, (1) enhanced noticing, (2) deeper processing, and (3) generation effect, are likely to have contributed to the superior performance of the WL+RE participants over their only reformulation counterparts. First, supporting the noticing function of the Output Hypothesis (Swain, 2005), having engaged in WL, i.e., producing language when comparing the original text and their reformulations, is likely to have enhanced the WL+RE participants' noticing of the target construction. Given that output is expected to function as an "attention-getting device" (Swain & Lapkin, 1995, p. 373), WL might have contributed to enhanced noticing and greater gains of the WL+RE participants as a consequence. The results also support Schmidt's (2001) Noticing Hypothesis claiming that noticing facilitates learning.

Second, the process of WL is also likely to have induced the WL+RE participants' deeper processing, i.e., a greater degree of analysis (Craik & Lockhart, 1972, p. 675), yielding longer-lasting and stronger memory representations compared to the participants in other conditions and further resulting in a favorable result for the WL+RE participants. With respect to the depth of processing, highlighting the importance of output, Swain (2000) also states that "output pushes learners to process language more deeply—with more mental effort—than does input" (p. 99). As stated above, it should be kept in mind that output and WL are not identical but given that both of them entail learners' language production, Swain's statement is likely to apply to WL, at least to some extent. Supposing this speculation is right, the opportunity of WL, i.e., to language about language, might have pushed "learners to process language more deeply—with more mental effort—*than does no opportunity of WL,*" resulting in deeper processing. This interpretation seems to account for the superior performance of the WL+RE group compared to the contrast and control groups.

Third, the results are also likely to be attributable to the generation effect proposed by Slamecka and Graf (1978), who claim that learners recall what they generate better than what they simply read at a later point in time, as well as the self-explanation effect proposed by

Chi (2000). So, this might explain for the fact that the final product of revised writing was different for the WL+RE group who were asked to write their thoughts while checking and comparing their own writing with the reformulated writing; WL helped them to remember what they were thinking, that WL helped them to remember their linguistic issues. It is believed that languaging can occur inside learners' minds like the metalinguistic thinking that learners use when they compose in L2 (Cumming, 1990). Taken together, the process of WL appears to have benefited the WL+RE participants by enhancing their noticing, triggering deeper processing and bringing about the generation effect.

In addition to the process, the products of WL may also be claimed to have profited the WL+RE participants as a source of further reflection on their linguistic issues (Swain, 2006). It might be speculated that WL was beneficial because they could review the products of writing later and could go back to their earlier thoughts and build on them whenever necessary. Therefore, as Ishikawa (2018) contends, the product of WL might enhance the reflective function of output as claimed by the Output Hypothesis (Swain, 2005).

Moreover, assuming that the facilitative functions of output "may be stronger for written production due to the more generous time constraints and permanent record of writing" (J. Williams, 2012, p. 323), the observed favorable results for the WL+RE participants might have been attributable to the heuristic nature of writing. As discussed, a slower pace and a permanent record are considered as two unique characteristics of writing and it is because of these characteristics that the process of writing enables learners to deepen their thoughts while do not feel on their minds as much time pressure as speaking. This allows them to reflect on the product of their writing, i.e., a permanent record/external memory (Hertel, 1993; W. Suzuki, 2012).

4. CONCLUSION AND IMPLICATIONS

The study was conducted with the intention to examine the role of written languaging upon receiving a reformulation of compositions in increasing the FL learners' development in their grammatical accuracy. It was evidenced that provision of reformulation with or without written languaging proved fruitful in enhancing the writing accuracy over revised tasks. Although reformulation alone was effective in gains in improving the writing accuracy of revised compositions in comparison to control group, the participants in written languaging plus reformulation group outperformed those in only reformulation group. Accordingly, teachers and practitioners are advised to utilize reformulation, languaging and particularly written languaging to help learners develop grammatical accuracy in writing. They can increase learners' extensive engagement in their error correction by getting them to write down their thoughts and reflections on their initial errors.

Overall, considering the findings of the similar studies as well as the present study, language learners are advised to consistently keep a written record of their errors and accustom themselves to language about their errors to deepen their insights into the gaps in their developing interlanguage and consequently obtain a better position to bridge them. However, it should be mentioned that, due to the fact that a small percentage of the reformulations were not noticed by the learners or not incorporated into the revision, the teachers are

advised to intervene in the comparison stage. This can take the form of having a whole-class discussion of reformulated texts to help students learn proper language usage. Class discussion might be more influential in raising students' awareness of their language holes and influence their subsequent revision.

No research may claim to be free of flaws and without limitations. The present study, too, had some limitations. The effort was made to include a delayed performance of the participants in the study; however, it wasn't possible due to some barriers. Therefore, we recommend further studies be conducted in the future which may include the analysis of the effect of reformulation and written languaging on delayed revisions of the learners. Also, we recommend to conduct a qualitative analysis of the learners' views on their processing through the use of interviews or questionnaires.

5. REFERENCES

- Brooks, L., Swain, M., Lapkin, S., & Knouzi, I. (2010). Mediating between scientific and spontaneous concepts through languaging. *Language Awareness, 19*(2), 89–110. <https://doi.org/10.1080/09658410903440755>
- Chi, M. (2000). Self-explaining expository texts: The dual processes of generating inferences and repairing mental models. In R. Glaser (Ed.), *Advances in instructional psychology* (pp. 161–238). Mahwah, NJ: Erlbaum.
- Chi, M., Bassok, M., Lewis, M. W., Reimann, P., & Glaser, R. (1989). Self-explanations: How students study and use examples in learning to solve problems. *Cognitive Science, 13*, 145–182. [https://doi.org/10.1016/0364-0213\(89\)90002-5](https://doi.org/10.1016/0364-0213(89)90002-5)
- Chi, M. T., Leeuw, N., Chiu, M. H., & LaVancher, C. (1994). Eliciting self-explanations improves understanding. *Cognitive science, 18*(3), 439–477. [https://doi.org/10.1016/0364-0213\(94\)90016-7](https://doi.org/10.1016/0364-0213(94)90016-7)
- Cohen, A. D. (1982). "Writing like a native: The process of reformulation". ERIC ED 224 338.
- Cohen, A. D. (1989). "Reformulation: A technique for providing advanced feedback in writing". *Guidelines: A Periodical for Classroom Language Teachers, 11*, 1–9.
- Coyle, Y., Mora, P. A. F., & Becerra, J. S. (2020). Improving reference cohesion in young EFL learners' collaboratively written narratives: Is there a role for reformulation?. *System, 94*, 102333. <https://doi.org/10.1016/j.system.2020.102333>
- Coyle, Y., & de Larios, J. R. (2020). Exploring young learners' engagement with models as a written corrective technique in EFL and CLIL settings. *System, 95*, 102374. <https://doi.org/10.1016/j.system.2020.102374>
- Cumming, A. (1990). Metalinguistic and ideational thinking in second language composing. *Written Communication, 7*, 482–511. <https://doi.org/10.1177/0741088390007004003>
- Dicamilla, F. J., & Lantolf, J. P. (1994). The linguistic analysis of private writing. *Language Sciences, 16*(3–4), 347–369.
- Dicamilla, F. J. and M. Anton (2004). Private speech: a study of language for thought in the collaborative interaction of language learners. *International Journal of Applied Linguistics, 14*(1), 36–69. <https://doi.org/10.1111/j.1473-4192.2004.00053.x>
- Fukuta, J., Tamura, Y., & Kawaguchi, Y. (2019). Written languaging with indirect feedback in writing revision: is feedback always effective? *Language awareness, 28*(1), 1–14.

- Lázaro-Ibarrola, Amparo. (2013). Reformulation and Self-correction: Insights into correction strategies for EFL writing in a school context. *Vigo International Journal of Applied Linguistics*, 10, 29–49
- Ishikawa, M. (2013). Examining the effect of written languaging: the role of metanotes as a mediator of second language learning. *Language Awareness*, 22(3), 220–233. <https://doi.org/10.1080/09658416.2012.683435>
- Ishikawa, M. (2015). “Metanotes (written languaging) in a translation task: do L2 proficiency and task outcome matter?” *Innovation in language learning and teaching* 9(2), 115–129. <https://doi.org/10.1080/17501229.2013.857342>
- Ishikawa, M. (2018). “Written languaging, learners’ proficiency levels and L2 grammar learning.” *System* 74, 50–61. <https://doi.org/10.1016/j.system.2018.02.017>
- Knouzi, I., Swain, M., Lapkin, S., & Brooks, L. (2010). Self-scaffolding mediated by languaging: microgenetic analysis of high and low performers. *International Journal of Applied Linguistics*, 20(1), 23–49. <https://doi.org/10.1111/j.1473-4192.2009.00227.x>
- Lantolf, J. P., & Frawley, W. (1983). *Second language performance and Vygotskian psycholinguistics: Implications for L2 instruction*. Paper presented at the The tenth LACUS forum.
- Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford: Oxford University Press.
- Long, M. H., Inagaki, S., & Ortega, L. (1998). The role of implicit negative feedback in SLA: Models and recasts in Japanese and Spanish. *The Modern Language Journal*, 82(3), 357–371. <https://doi.org/10.1111/j.1540-4781.1998.tb01213.x>
- Lyster, R., & Ranta, L. (1997). Corrective feedback and learner uptake. *Studies in Second Language Acquisition*, 19(1), 37–66. <https://doi.org/10.1017/S0272263197001034>
- Moradian, M. R., Miri, M., & Hossein Nasab, M. (2015). Contribution of written languaging to enhancing the efficiency of written corrective feedback. *International Journal of Applied Linguistics*, 27(2), 406–426. <https://doi.org/10.1111/ijal.12138>
- Ohta, A. S. (2001). *Second language acquisition processes in the classroom: Learning Japanese*. Routledge.
- Roebuck, R. (2000). Subjects speak out: How learners position themselves in a psycholinguistic task. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 79–95). Oxford University Press.
- Schmidt, R. W. (1990). “The role of consciousness in second language learning”. *Applied Linguistics*, 11, 129–158. <https://doi.org/10.1093/applin/11.2.129>
- Schmidt, R. W. (2001). Attention. In P. Robinson (Ed), *Cognition and second language instruction* (3–32). Cambridge: Cambridge University Press.
- Shintani, N., Ellis, R., & Suzuki, W. (2014). Effects of written feedback and revision on learners’ accuracy in using two English grammatical structures. *Language Learning*, 64(1), 103–131. <https://doi.org/10.1111/lang.12029>
- Storch, N. (2001). Comparing ESL learners’ attention to grammar on three different classroom tasks. *RELC Journal*, 32(2), 104–124. <https://doi.org/10.1177/003368820103200207>
- Storch, N. (2002). Patterns of interaction in ESL pair work. *Language Learning*, 52(1), 119–158. <https://doi.org/10.1111/1467-9922.00179>
- Storch, N. (2008). Metatalk in a pair work activity: Level of engagement and implications for language development. *Language Awareness*, 17(2), 95–114. DOI: 10.1080/09658410802146644
- Storch, N. (2013). *Collaborative writing in L2 classrooms*. Bristol, UK: Multilingual Matters.
- Storch, N. (2018). Written corrective feedback from sociocultural theoretical perspectives: A research agenda. *Language Teaching*, 51(2), 262–277. <https://doi.org/10.1017/S0261444818000034>

- Suzuki, W. (2009). Improving Japanese university students' second language writing accuracy: Effects of languaging. *Annual Review of English Language Education in Japan*, 20, 81–90. https://doi.org/10.20581/arele.20.0_81
- Suzuki, W. (2012). Written Languaging, Direct Correction, and Second Language Writing Revision. *Language Learning*, 62(4), 1110–1133. doi:10.1111/j.1467-9922.2012.00720.x
- Suzuki, W., & Itagaki, N. (2007). Learner metalinguistic reflections following output-oriented and reflective activities. *Language Awareness*, 16(2), 131–146. <https://doi.org/10.2167/la392.0>
- Suzuki, W., & Itagaki, N. (2009). Languaging in grammar exercises by Japanese EFL learners of differing proficiency. *System*, 37(2), 217–225. <https://doi.org/10.1016/j.system.2008.10.001>
- Swain, M. (2005). The output hypothesis: Theory and research. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 471–483). Lawrence Erlbaum Associates.
- Swain, M. (2006). Languaging, agency, and collaboration in advanced second language proficiency. *Advanced language learning: The contribution of Halliday and Vygotsky*, 95–108.
- Swain, M. (2010). Talking it through: Languaging as a source of learning. *Sociocognitive perspectives on second language learning and use*, 112–130.
- Swain, M., & Lapkin, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics*, 16(3), 371–391. <https://doi.org/10.1093/applin/16.3.371>
- Swain, M., & Lapkin, S. (1998). Interaction and second language learning: Two adolescent French immersion students working together. *The Modern Language Journal*, 82(3), 320–337. <https://doi.org/10.1111/j.1540-4781.1998.tb01209.x>
- Swain, M., & Lapkin, S. (2002). Talking it through: Two French immersion learners' response to reformulation. *International Journal of Educational Research*, 37(3), 285–304. [https://doi.org/10.1016/S0883-0355\(03\)00006-5](https://doi.org/10.1016/S0883-0355(03)00006-5)
- Swain, M., Lapkin, S., Knouzi, I., Suzuki, W., & Brooks, L. (2009). Languaging: University students learn the grammatical concept of voice in French. *The Modern Language Journal*, 93(1), 5–29. <https://doi.org/10.1111/j.1540-4781.2009.00825.x>
- Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.
edn. Cambridge, MA: Harvard University Press.
- Wigglesworth, G. (2008). Task and Performance Based Assessment. In N. H. Hornberger (Ed.), *Encyclopedia of Language and Education*. (pp. 2251–2262) Boston: Springer.
- Williams, J. (2001). The effect of spontaneous attention to form. *System*, 29(3), 325–340. [https://doi.org/10.1016/S0346-251X\(01\)00022-7](https://doi.org/10.1016/S0346-251X(01)00022-7)
- Williams, J., & Evans, J. (1998). What kind of focus and on which forms? In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 139–155). Cambridge University Press.
- Williams, J. (2012). The role(s) of writing and writing instruction in L2 development. *Journal of Second Language Writing*, 21, 321–331.
- Yang, L., & Zhang, L. (2010). Exploring the role of reformulations and a model text in EFL students' writing performance. *Language Teaching Research*, 14(4), 464–484. <https://doi.org/10.1177/1362168810375369>