



Comparing the Effectiveness of Three Written Corrective Feedback Modalities in Second Language Acquisition

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Abstract

The effectiveness of written corrective feedback (WCF) in L2 acquisition has been a controversial issue. This article presents the results of a study conducted among 32 third year Arts students of a state University in Sri Lanka to find out the impact of WCF in three conditions: direct correction without metalinguistic information, with metalinguistic explanation and with metalinguistic explanation in a computer mediated context. The study used a quasi-experimental design of intact class with pre-test, post-test and delayed post-test, comparing the effect of the three types of feedback on the grammatical accuracy in using simple past and subject verb concord. The post hoc multiple comparison tests carried out using repeated measures ANOVA reveal that all the three modalities of WCF have equal impact on the acquisition of English as a Second Language.

Key words: written corrective feedback, second language acquisition, accuracy

Introduction

Writing in a second language (L2) is a unique, complex and challenging task, and therefore the search for how to help students develop it has become an important goal for teachers and researchers of second language acquisition (SLA). One of the more traditional ways of doing this has been through the delivery of feedback, which can cover various aspects of writing such as content, text organization, application of the conventions of the types of texts used and the linguistic system. The feedback that specifically focuses on the use of language has been called written corrective feedback (WCF) (Hyland & Hyland, 2006; Ellis, Sheen, Murakami & Takashima, 2008; Van Beuningen, 2010).

The role that WCF can have in helping speakers improve the grammatical accuracy of their written texts has been a subject of debate for researchers and teachers, because there has been divergence about the effectiveness of correcting errors, from those positions who indicate that students do not need it to progress (Krashen, 1982), that it is not effective and even harmful for language acquisition (Truscott, 1996) and those who propose that feedback plays a predominant role in learning the language (Long, 1996 ; Lyster & Ranta, 1997 ; Ellis, 2009 ; Sheen,

2011; Farjadnasab & Khodashenas, 2017; Ning & Yingying, 2018), as it encourages students to notice and even produce language structures so that they can repair their mistakes. Despite this discrepancy, the topic has been the subject of research for the past two decades, which has exponentially promoted studies around the big question in written corrective feedback; that is, whether or not it contributes to the acquisition of second languages (Bitchener & Ferris, 2012 ; Kang & Han, 2015). Currently, the effectiveness of WCF has been demonstrated in some specific cases in which empirical research conditions have been rigorously controlled (Sheen, 2011; Bitchener & Ferris, 2012) and although the big question is still latent, the studies have led to sub-questioning, which has deepened issues such as quality, effectiveness, relevance, methodology and interpretation of results, among others.

Currently, second language teachers strive to help their students write more effectively, however, students do not progress in producing text with greater grammatical accuracy (Ferris, 2010). In the Sri Lankan context, students learning English as a second language make mistakes with different morphosyntactic characteristics, two of the grammatical structures that present acquisition difficulties for speakers are the simple past and the subject-verb agreement.

Hence, the purpose of the study was to determine whether a WFC treatment that is given directly (explicitly) and focused (treatment of both structures), in three modalities (direct correction without metalinguistic information, direct correction with written metalinguistic information and direct correction with written and computer-mediated metalinguistic information), improves grammatical accuracy in the use of the simple past and the subject-verb agreement in the written production of new texts in English such as L2 in the short and long term. The findings suggest that under well-controlled experimental conditions, written corrective feedback in all the three investigated modalities promotes the acquisition of the treated structures.

Literature review

The feedback correction is considered as a reaction of the teacher invites the student to pay attention to the grammatical accuracy of something that has been said or written (Sheen, 2011). This definition reveals the roles of those who participate in the feedback process, the guiding or indicative function of the teacher and that of being able to notice. Regarding the purpose of giving feedback, this can vary substantially depending, for example, on the modality of the language; that is, if the feedback is given orally or in written form. The first is a technique of focusing on the form (Long, 1996), which points to students' mistakes about their production in an oral communicative activity (Sheen, 2011). It is immediate and is done through an online comparison. As for the second, it is the one that is

given about the errors that students make in their written texts (Bitchener & Ferris, 2012). It is not immediate and therefore the comparison is made in a delayed way. While most of the research in oral corrective feedback has focused on the correction of form errors, with the sole purpose of improving the grammatical accuracy of focused linguistic elements, the studies of WCF have had a varied attention, different from only improving the grammatical accuracy of written texts, because they have also been in charge of improving quality by developing content and organization review strategies.

Effectiveness of corrective feedback in second language acquisition

The WCF studies sought answers to various questions about CF; however, they did not focus on the macro question on this topic; that is, if the CF has the potential to contribute to the development of L2 (Bitchener & Ferris, 2012). In 1996, Truscott in a highly important article “*The Case Against grammar correction in L2 Writing Classes*” postulated that the delivery of written corrective feedback was not effective and could also be harmful to the development of writing. He argues that, first, there was no empirical evidence to support the assumption that correcting written errors helps second language speakers improve their grammatical accuracy. In addition, from a theoretical point of view, the correction of errors cannot contribute to the development of the competence of an L2 or influence the natural order and the sequence of acquisition. However, Ferris (1999) argues that the research base to which Truscott refers is too limited and conflicting in its results, therefore there should be some moderation in the comments to demonstrate greater consistency in the research. Ferris (1999) also adds that Truscott (1996) would have underestimated the potential of the evidence produced by some studies on the positive effect of grammar correction and adds that the need for correction of students cannot be so easily dismissed or omitted. Truscott (1996) and Ferris (1999) have agreed on an important point, namely that the investigation of the correction of errors in production written in an L2 is insufficient. From this, various research approaches have specialized in observing the problem from specific points of view.

In order to answer the question about the effectiveness of WCF, it is important that the studies are properly designed, and the literature indicates that a large number of studies lack a robust research design (Bitchener, 2008; Bitchener & Ferris, 2012). Some of the flaws in the design and deficiencies in its execution explain to what extent the findings can be classified as acceptable or not: (1) the lack of a control group, (2) failure to measure grammatical accuracy in new written texts, and (3) absence of forms of longitudinal measurement of learning are among the most critical issues found. Bitchener (2008) has reviewed a large number of studies on the effects of WCF, noting that very few of them have

included a control group, so it has not been possible to compare between those students who receive and those who do not receive CF.

Types of written corrective feedback

Research that has studied the relative efficacy of WFC has focused primarily on types of WFC for the past 30 years (Hyland, 2010; Bitchener & Ferris, 2012). The Direct corrective feedback can be defined as the provision of correct linguistic structure above or near the linguistic error (Van Beuningen, 2010), this may include crossing out a word, phrase, or morpheme that is not necessary, insertion of a word, phrase or morpheme or the provision of the correct form. Other forms of direct CF can be a written metalinguistic explanation or an oral metalinguistic explanation (Bitchener, 2008). On the other hand, indirect corrective feedback indicates that somehow an error has occurred, but does not provide an explicit correction. This can be provided by underlining the error, recording in the margin the number of errors on a given line, or by using a code to show that the error has occurred and what type of error it is (Sheen, 2011). The value of the indirect approach lies in the fact that it requires students to participate in guided learning and problem solving. Some theorists consider that direct CF is preferred by teachers and students, and further suggest that direct CF reduces the type of confusion that results when students fail to understand or remember the codes used by the teacher (Chandler, 2003).

Another distinction that seems relevant based on the study carried out is the distinction between focused and non-focused WCF. The latter corresponds to the usual practice of writing teachers who correct all errors in student work (Ellis, 2009). According to Ellis (2009), there are solid theoretical reasons that support the argument that focused CF can be more accurate than non-focused CF. Students are more willing to pay attention to corrections directed at one or a limited number of types of errors and more likely to develop a greater understanding of the nature of the error and the necessary correction. If noticing and understanding (Schmidt, 2001) are necessary for acquisition, then focused CF is clearly in a better condition to produce better results.

Corrective feedback in the context of writing in an L2

As already mentioned, before the mid-1990s, empirical research on the effects of WCF was relatively limited, one of the reasons being the result of prevailing theoretical and historical trends; first, writing was not important in L2 instruction, and later was strongly influenced by the pedagogy of process writing and also by Krashen's (1982) SLA theories. A few studies were carried out between 1976 and 1996 (Semke, 1984 ; Robb, Ross & Shortreed, 1986 ; Kepner, 1991), which had major problems, such as methodological ones. Subsequently, a series of materials designed to address linguistic issues in L2 writing began to appear in the

1990s, such as editing manuals for English as a Second language (Lane & Lange, 1993). In this scenario, in the 24 years that have elapsed since the publication of the original article by Truscott (1996), the WCF has been viewed as a tool towards that broader objective and not as an end in itself.

Effects of WCF on revision and editing skills in an L2

One of the most recurrent questions about the effects of WCF is related to the validity of the findings of studies that investigate the revision of texts written by students after receiving CF, based on the understanding of the processes of application of feedback as well as development of students' writing ability (Ferris, 2010). Despite the differences in these studies, both in terms of methodology and the diversity in the contexts of application of the WCF, it is possible to conclude that the results are very consistent in that the effect of correcting the errors that the students make by reviewing and rewriting the same written text are substantial (Truscott & Hsu, 2008). When students receive WCF in a text and are asked to review it, they do it successfully (Bitchener & Ferris, 2012); that is, with a statistically significant reduction in the number of errors between one draft and another. However, for Truscott and Hsu (2008), the WCF that is delivered in the review process does not provide evidence that such an intervention helps students acquire language structures, it is only useful to help students improve a written product, particularly in a precise context. For other researchers (Ferris, 2010; Van Beuningen, de Jong & Kuiken, 2012) the role of the WCF in the revision tasks of the same text, generates the necessary conditions that facilitate long-term acquisition. This is supported by the fact that the cognitive processes involved in receiving CF and applying the repairs to the corrections in the revision of written texts, can produce the types of gradual nonlinear changes in long-term writing ability. Ferris (2010) suggests a research design that combines the short-term approach of review studies with the long-term approach of SLA research.

Corrective feedback from the perspective of computer-mediated SLA

In the era of internet distance learning and mobile communication, some SLA researchers are increasingly interested in the role WCF in computer-mediated communication (CMC). According to its affordances, technology has shown its relevance in education and therefore in the teaching and learning of a second language. For language professionals, CMC could potentially answer two needs; on the one hand, it could be the means through which teaching occurs and / or it could be an end in itself (Hyland, 2010).

The central question is how the computer-mediated response could imitate or even improve the results reported by the research about the interaction of peers or tutor-student or tutor-group class, in a classroom setting. Studies have

compared known design practices in the classroom with activities carried out with or through the electronic medium (Ware & Warschauer, 2006). Some of the early studies examined the effectiveness of CF in a computer-assisted language learning environment. Nagata (1993) compared feedback provided by the computer with and without metalinguistic explanations directed at errors in the use of passive structures in Japanese, and found that metalinguistic feedback was more effective than feedback without metalinguistic comments. Di Giovanni and Nagaswami (2001) demonstrated that students were more focused on the task by providing feedback during real time, instructors noted the benefits of the electronic medium that incorporates the ability to monitor peer conversations and print transcripts. They suggest a positive indirect effect for students who may feel that this type of teacher supervision is adequate. In a small case study designed to examine the effectiveness of working with students' written texts to develop metalinguistic awareness, Yuan (2003) showed how two students analyzed the transcripts of their own writing and in this way they became more attentive to the errors they produced when writing; the electronic modality was only a useful means of storing their written texts for later analysis in the classroom. The study by Hewett (2000) explored the impact of the feedback in reviews. She investigated how students apply to the writing of their texts what they learned through conversation with peers. It was highlighted that the type of interaction had an impact on the review; while the oral conversation included the development of abstract and global ideas, the Electronic feedback focused on more specific writing topics. Razagifard and Razzaghifard (2011) examined corrective feedback in communicative contexts with technology and found that students who received computer-mediated CF outperformed those who did not receive any type of feedback.

To summarize, technology-mediated feedback, like corrective feedback in written composition, shows great methodological diversity in designs. Despite this, the findings are encouraging, but little is yet known about how this type of feedback differs from traditional feedback and whether the same variables that account for acquisition in a face-to-face environment are relevant to learning in the context of learning. computer mediated communication (Loewen & Erlam, 2006; Hyland, 2010).

Methodology

The study was designed to answer the following research questions: 1) what is the effectiveness of direct WCF focused on the grammatical accuracy of the use of the simple past and of subject-verb agreement in the process of producing new texts in English as L2, in the short and long term? 2) To what extent does the type of WCF determine the grammatical accuracy of the use of the simple past and subject-verb agreement in the process of producing new texts in English as L2?

The study used a quasi-experimental design of intact classes, which functioned as experimental groups in this research - Group1 (G1_FNM) focused direct corrective feedback without metalinguistic information (N = 8), Group2 (G2_FM) focused direct corrective feedback with written metalinguistic explanation (N = 8), Group 3 (G3_FMC) focused direct corrective feedback with written and computer-mediated metalinguistic explanation (N = 8) - and Group 0 (G0_C) control group (N = 8). The four groups completed a pre-test, a post-test and a delayed post-test.

Regarding treatment, the three experimental groups received correction of errors in four written texts, two of which were revisions of the same text. The three experimental groups received direct (explicit) focused correction (two structures), exclusively aimed at errors involving the use of the simple past and subject-verb agreement in the English language. On the other hand, the control group only received a general comment about the content of the four written texts.

The participants were 32 seniors out of the 91 third year first semester students who were following their General Degree (three year degree) at the Faculty of Arts in a Sri Lankan university. These participants were in the same level (lower intermediate) of proficiency in ESL, based on their results in the second year second semester examination. Out of the 32, there were 24 females and 8 males.

The structures treated with WFC are: 1) Simple past, specifically the correct use of regular, irregular verbs and verbal copulation and 2) the concordance between subject and verb of the present simple.

There were 5 treatment sessions. Students in the four groups wrote the same texts (magazine articles), two new texts, and two actual reviews; each of them in separate lessons. The students of the experimental groups received WCF from the researcher for each of the written texts and the control group a general comment on the content. Before writing the magazine articles, the students were asked to carry out two activities, one individual and the other in pairs, in order to elicit the vocabulary and content necessary to carry out the written task. Subsequently, they were given a stimulus to write a 200-word text. Once the written task was finished, there was a follow-up lexical activity that they had to carry out individually.

The texts of the experimental groups were corrected by the researcher. In the following class, the students received the corresponding corrections and were asked to review errors and corrections carefully. After reviewing the written texts, the researcher did not comment on the errors and did not provide any additional explanation. The procedure for the control group was the same, except that the students did not receive any WCF, only a general comment on the content of the text.

Correction guidelines for experimental groups

The modalities of focused direct written FC received by the experimental groups and the non-written CF received by the control group can be seen in Table 1.

Table 1: List of focused direct WFC strategies for this study

Experimental groups	G1_FNM Received direct focused WCF without metalinguistic information. G2_FM Received direct focused WCF with written metalinguistic explanation. G3_FMC Received direct focused WCF with written and computer mediated metalinguistic explanation.
Control group	G0_C Received no WCF; only general comments on the content and organization of the text.

Instruments

For each evaluation session, a pre-test, a post-test and delayed post-test were administered. For these purposes, the students wrote a letter. This type of text was selected because it creates the necessary conditions to elicit the structures under study and is in accordance with the type of written tasks that students usually carry out according to their study program. In order for the students to write the letter, they were given a written stimulus that raised a situation related to their academic environment and to which they had to react in written form. For the pre-test, post-test and delayed post-test, the students wrote a new text (letter), of the same difficulty, length and duration.

The pre-test was administered immediately before the students received the first written production assignment. The post-test was administered on the same day that the students received feedback on their last written text. The delayed post-test was administered 5 weeks later.

Analysis of results

To analyze the effects of treatment on the use of the simple past and the verb subject concordance, scores were obtained for the pre-test, post-test and post-delayed post-test. These scores were calculated using the obligatory occasion analysis (Ellis & Barkhuizen, 2005). All mandatory occasions of use of the simple past and of the verb subject concordance were identified. Each occasion was examined to see the correct application of the grammatical structures treated. Furthermore, the omission of the application of the structure was also considered as an error. The grammatical accuracy score was calculated for each text dividing the number of correct answers in the use of the structures by the total number of obligatory occasions plus the number of application of the structure in non-obligatory contexts.

Writing task scores were analyzed with repeated measures ANOVA (2 groups X 3 occasions) with post hoc multiple comparison tests with Bonferroni adjustment.

Results of written tests by group for both structures

The first thing reported in this section are the results of the written *tests* for each of the experimental groups and the control group, as regards the set of grammatical structures.

Table 2: Descriptive statistics for the written *tests* for each study group

Group	N	T ₀		T ₁		T ₂	
		M	SD	M	SD	M	SD
G0_C	8	60.8	9.7	61.2	14.6	55.9	12.0
G1_FNM	8	63.0	10.7	81.9	10.6	71.5	13.1
G2_FM	8	62.9	13.6	80.6	10.7	80.9	7.6
G3_FMC	8	60.8	12.4	78.4	13.4	79.9	10.9

M = mean SD = standard deviation

Table 2 shows the mean and standard deviation of the pre-test, post-test and delayed post-test that measured grammatical accuracy past simple and subject-verb agreement for each group of the study. It illustrates that all groups on average score just above 60 points in the pre-test, and only three experimental groups were able to increase the accuracy between the pre-test and delayed post-test. However, only participants in the G2_FM and G3_FMC groups were able to increase grammatical accuracy after the pre-test, and sustain this gain in accuracy in the delayed post-test, since the G1_FNM had a rapid rise in post-test, also had a sharp decrease in the delayed post-test.

In order to examine whether the differences in the scores of the written *tests* over time were statistically significant, a repeated measures analysis (ANOVA) was performed with grammatical accuracy (written test scores) as a dependent variable and time (pre-test, post-test and delayed post-test) and the written treatment of CF as independent variables.

Table 3: Scores of repeated measures ANOVA of written test

	Source	Sum of squares	df	F	Sig.
Between-subjects	CF	7898.156	3.69	9.722	.001
	error	18687.666			
Within-subject	Time	3895.668	1.69	53.587	.001
	Time X Treat. CF	3218.171	3.69	14.755	.001
	Error	5016.282			

As can be seen in Table 3, there was a significant effect for the treatment of WCF, $F(3.69) = 9.722$; $p < 0.001$, indicating that the three treatment groups, in general, performed significantly better than the control group in the total test scores. Table 3 also reveals significant evidence of the effect Time, $F(1.69) = 53.587$; $p < 0.001$ and of the interaction Time * Treatment, $F(3.69) = 14.755$; $p < 0.001$ indicating that the groups performed differently over time.

In light of these results, several post hoc multiple comparison tests (with an alpha level of 0.05) were performed to isolate exactly where the differences occurred.

Table 4: Multiple comparisons by group

(I)CF	(J)CF	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Level	
					Lower Bound	Upper Bound
G0_C	G1_FNM	-12.5*	3.2	.001	-21.1	-3.9
	G2_FM	-15.3*	3.1	.001	.238	-6.8
	G3_FMC	-13.3*	3.2	.001	-21.9	-4.7
G1_FNM	G2_FM	-2.9	3.1	.999	-11.4	5.6
	G3_FMC	-.9	3.2	.998	-9.5	7.8
G2_FM	G3_FMC	2.0	3.1	.996	-6.5	10.5

These comparisons revealed first of all that statistically significant differences were found between the scores of the control group and the scores of the experimental groups. Table 4 shows that, based on the observed means in the study in the total score, the three experimental groups individually, had superior performance to the control group. Regarding the comparison between themselves, there are no statistically significant differences in their performance. As can be seen in Table 1, participants in group one who received focused direct corrective feedback without metalinguistic information, those in group two who received Direct Corrective feedback with metalinguistic explanation, as well as those in group three who received focused corrective feedback with computer-mediated metalinguistic explanation, outperformed the control group participants who did not receive corrective feedback.

Table 5: Multiple comparisons by time

CF	(I)Time	(J)Time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Level	
						Lower	Upper
G0_C	T0	T1	-.6	3.1	.999	-8.1	7.0
		T2	4.2	2.8	.442	-2.8	11.1
	T2	T3	4.7	2.8	.286	-2.1	11.6
G1_FNM	T0	T1	-19.7*	3.1	.001	-27.2	-12.1
		T2	-8.2*	2.9	.016	-15.1	-1.6
	T2	T3	11.5*	2.8	.001	-25.4	-10.7
G2_FM	T0	T1	-18.0*	3.0	.001	-25.4	-10.7
		T2	-18.5*	2.8	.001	-25.3	-11.7
	T2	T3	-.4	2.7	.999	-7.1	6.3
G3_FMC	T0	T1	-17.7*	3.1	.001	-25.3	-10.1
		T2	-18.9*	2.8	.001	-25.9	-11.9
	T2	T3	-1.2	2.8	.999	-8.0	5.7

When analyzing the performance of each of the study groups between the pre-test (T0), post-test (T1) and delayed post-test (T2), the multiple post hoc comparisons also showed that there were statistically significant differences for the G1_FNM between pre-test and post-test $p < .001$; between the pre-test and the deferred post-test (T2), $p = .016$; as well as between the post-test and the deferred post-test $p < .001$; indicating that the profit achieved in T1 is not sustained in T2. On the other hand, the G2_FM and G3_FMC groups obtain statistically significant differences between pre-tests and post-test, $p < .001$; as well as between pre-test and delayed post-test, $p < .001$; but not between post-test and deferred post-test, $p = 0.999$, which implies that the gains achieved by these groups in the post-test are sustained in the delayed post-test.

Discussion

The first research question investigated the effectiveness of direct WFC focused on the grammatical accuracy of the use of the simple past and subject-verb agreement in the process of producing new texts, written in English as L2, in short and long terms. In this scenario, the results of the written production tests revealed that the three experimental groups were able to increase the grammatical accuracy between the pre-test and the immediate post-test and between the pre-test and the delayed post-test, when students used the simple past and subject-verb agreement.

Regarding the control group, which is the group that did not receive CF only written production practice, the results indicate that the grammatical accuracy

of the structures does not show increases. Regarding the efficacy of the results of written production tests, the analysis of repeated measures within subjects confirmed that the aforementioned differences were statistically significant; this indicates that the results of the experimental groups was significantly superior to the results of the control group during the time the study was carried out. These results, like those of Sheen (2007), Bitchener (2008), Ellis et al. (2008) and Sheen, Wright and Moldawa (2009), have shown that a treatment of CF that has been rigorous in the methodological procedure regarding the use of a control group, the writing of new texts and the longitudinal measurement of results, has important effects in the process of acquiring two structures. Furthermore, it is probable that the incorporation of text revision into the design has generated the necessary conditions that facilitate long-term acquisition, which is contrary to what was reported by Truscott and Hsu (2008), who affirm that the WCF does not affect the acquisition of L2, nor the production of new written texts and that only works by recomposing the same text a second time.

The second question was to find out whether the type of written corrective feedback determines the grammatical accuracy of the use of the simple past and of subject-verb agreement, in the process of producing new texts in English as L2. As previously reported, the general results indicate that the experimental groups outperformed the control group, which was not able to improve their performance in the immediate post-test or in the delayed post-test. This observation was statistically corroborated by repeated measures ANOVA that demonstrates a statistically significant difference between groups (CF treatment); that is, the experimental groups were superior to the control group when time was controlled. The multiple comparisons between the study groups in relation to the results for the set of structures, showed statistically significant differences between each one of them and the control group; that is, the three forms of feedback treatment. Corrective focused direct writing was superior to writing practice that did not receive CF, only a general comment on content and organization. In this comparison, the results also reveal that there were no statistically significant differences between the experimental groups, this is an indicator that all the treatments were effective. A second analysis of multiple comparisons of each of the treatments based on the gains obtained between pre-test and post-test, and between pre-test and delayed post-test indicate that there were statistically significant differences for the three experimental groups, not for the control group. In this analysis it is interesting to observe that the level of accuracy of group 1 was lower than that of the groups that also provided metalinguistic information. The decrease in the performance of the G1_FNM in the delayed post-test could indicate that this type of feedback produces a

significant short-term effect, but not so much in the long term, because error processing may be less profound (Ferris, 2010), since the immediate resolution of the problem by delivering the correct answer does not require greater cognitive effort, and therefore the effect of the treatment may not be as powerful in the long term as in those cases in which explicit information is provided of rules that require more reflection, cognitive effort and greater depth of processing. The findings also contribute in relation to previous studies; first, it corroborates what was reported by Bitchener, Young and Cameron, (2005) who found that adding a written metalinguistic explanation helps students improve the grammatical accuracy of their writing, but they also demonstrate that an oral metalinguistic explanation through a focused mini-lesson, through a computer application (blog), delivered individually to students, it can be as effective as a traditional form of CF.

Conclusion

The study reported in this article has investigated the delivery of direct and focused written corrective feedback in a university context that promotes the process of producing written texts in English such as L2. The cases for and against written corrective feedback are not based solely on what the investigation has managed to discover about its effectiveness; however, this evidence is a fundamental aspect that must be considered (Ellis et al., 2008). From this, different lines of research have accepted the challenge of demonstrating, not only the effectiveness of CF in general in the long term, but also how it can be applied in different contexts; as a result, empirical studies with a robust methodological design (Bitchener et al., 2005 ; Sheen, 2007 ; Ellis et al., 2008 , Van Beunighen et al., 2012) have shown that CF applied to the repair of errors in the use of one or two grammatical structures does have a positive effect; in parallel, studies whose focus has been on students learning to write in an L2, have used CF so that students are able to develop strategies for reviewing and editing texts with positive short-term results, but not so conclusive long-term (Ferris, 2010) and finally, technology studies in second language learning have delved into how technological innovations can positively impact the entire system of feedback and especially from CF (Razagifard & Razzaghifard, 2011). These lines of research have been one of the fundamental components that support the integrated research model that has been implemented in the study; namely, a methodologically robust model that encourages recursive writing and that incorporates technology. From this, the study concludes that unlike most WCF research that has been conducted in higher education settings, WCF is effective in helping a group of L2 university students improve grammatical accuracy of two structures in the short and long term, which may be an indication of acquisition; furthermore, it is likely that having carried out revisions of the texts after receiving feedback is an important factor in the assimilation of the CF and that the uptake resulting from this process promote

the retention of erroneous structures. The study also shows that WCF can be as effective as other forms of traditional feedback when experimental conditions have been well controlled. The use of the main constructs of socio-cultural theory in the delivery of the CF through computer mediation, together with cognitive constructs, allowed the effectiveness in the effect of the WCF at the same level of the results in situations such as the cognitive vision and in traditional face-to-face mode. The students were able to notice the error and correct it, but with the assistance of the expert tutor who through a scaffolding process varied the specific strategies that he used with the students, who understood the help and were able to incorporate the feedback that they were given. Another important point to note is that the studies that have been successful in providing evidence of the usefulness of WCF have focused mainly on articles in English (Sheen, 2007; Ellis et al., 2008; Van Beuningen et al., 2012). Very few have explored other grammatical categories. Clearly, the research requires evidence that CF can positively affect the acquisition of a more varied range of grammatical structures. Finally, the findings of the study indicate that the more awareness of the explicit metalinguistic information given to them, the greater the effectiveness of the feedback, which could be an indicator of acquisition.

References

- Bitchener, J. Evidence in support of written corrective feedback. *Journal of Second Language Writing*, 17 (2), 102-118. 2008.
- Bitchener, J. & Ferris, D. *Written corrective feedback in second language acquisition*. New York: Routledge. 2012.
- Bitchener, J., Young, S. & Cameron, D. The effect of different types of corrective feedback on ESL student writing. *Journal of Second Language Writing*, 14 (3), 191-205. 2005.
- Chandler, J. The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. *Journal of Second Language Writing*, 12 (3), 267-296. 2003.
- DeKeyser, R. *Practice in a second language: Perspectives from applied linguistics and cognitive psychology*. New York: Cambridge University Press. 2007.
- DiGiovanni, E. & Nagaswami, G. Online peer review: An alternative to face-to-face? *ELT Journal*, 55 (3), 263-272. 2001.
- Ellis, R. A typology of written corrective feedback types. *ELT Journal*, 63 (2), 97-107. Ellis, R. & Barkhuizen, G. (2005). *Analyzing learner language*. Oxford: Oxford University Press. 2009.

- Ellis, R., Sheen, Y, Murakami, M. & Takashima, H. The effects of focused and unfocused written corrective feedback in English as a foreign language context. *System*, 36, 353-371. 2008.
- Farjadnasab, A. & Khodashenas, M. The Effect of Written Corrective Feedback on EFL Syudents' Writing Acuracy. *International Journal of Research in English Education*, 2(2). 2017.
- Ferris, D. The case for grammar correction in L2 writing classes: A response to Truscott (1996). *Journal of Second Language Writing*, 8, 1-10. 1999.
- Ferris, D. Second language writing research and written corrective feedback. *Studies in Second Language Acquisition*, 32, 181-201. 2010.
- Hewett, B. Characteristics of interactive oral and computer-mediated peer group talk and its influence on revision. *Computers & Composition*, 17, 265-88. 2000.
- Hyland, F. Future directions in feedback on second language writing: Overview and research agenda. *International Journal of English Studies*, 10 (2), 171-182. 2010.
- Hyland, K. & Hyland, F. *Feedback in second language writing: Contexts and issues*. chap. 7. Cambridge: Cambridge University Press. 2006.
- Kang, E. & Han, Z. The efficacy of written corrective feedback in improving L2 written accuracy: A meta-analysis. *The Modern Language Journal*, 99 (1), 1-18. 2015.
- Kepner, C. 'An experiment in the relationship of types of written feedback to the development of second-language writing skills'. *The Modern Language Journal*, 75 (3), 305-313. 1991.
- Krashen, S. . *Principles and practices in second language acquisition*. Oxford: Pergamon Press. 1982.
- Lane, J. & Lange, E. *Writing clearly: An editing guide*. Boston, MA: Heinle & Heinle. 1993.
- Long, M. The role of the linguistic environment in second language acquisition. *Handbook of second language acquisition*, 26, 413-468. 1996.
- Loewen, S. & Erlam, R. Corrective feedback in the chatroom: An experimental study. *Computer Assisted Language Learning*, 19 (1), 1-14. 2006.
- Lyster, R. & Ranta, L. 'Corrective feedback and learner uptake'. *Studies in Second Language Acquisition*, 19, 37-66. 1997.

- Nagata, N. 'Intelligent computer feedback for second language instruction'. *The Modern Language Journal*, 77 (3), 330-339. 1993.
- Ning, F. & Yingying, M. 'The role of written corrective feedback in second language writing practice'. *Theory and practice in language studies*, 8(12).2018.
- Razagifard, P. & Razzaghifard, V. 'Corrective feedback in a computer-mediated communicative context and the development of second language grammar'. *Teaching English with Technology*, 11 (2), 1-17. 2011.
- Robb, T., Ross, S. & Shortreed, I. 'Salience of feedback on error and its effect on EFL writing quality'. *TESOL Quarterly*, 20 (1), 83-93. 1986.
- Schmidt, R. Attention. In P. Robinson (Ed.). *Cognition and second language instruction* (pp. 1-32). New York: Cambridge University Press. 2001.
- Semke, H. Effects of the red pen. *Foreign Language Annals*, 17(3), 195-202. 1984.
- Sheen, Y. 'The effect of focused written corrective feedback and language aptitude on ESL learners' acquisition of articles'. *TESOL Quarterly*, 4, 255-283. 2007.
- Sheen, Y. *Corrective feedback individual differences and second language learning*. New York: Springer. 2011.
- Sheen, Y., Wright, D. & Moldawa, A. Differential effects of focused and unfocused written correction on the accurate use of grammatical forms by adult ESL learners. *System*, 37 (4), 556-569. 2009.
- Truscott, J. . Review article. The case against grammar correction in L2 writing classes. *Language Learning*, 46 (2), 327-369. 1996
- Truscott, J. & Hsu, A. Error correction, revision, and learning. *Journal of Second Language Writing*, 17 (4), 292-305. 2008.
- Van Beuningen, C. Corrective feedback in L2 writing: Theoretical perspectives, empirical insights, and future directions. *International Journal of English Studies*, 10 (2), 1-27. 2010.
- Van Beuningen, C.G., De Jong, N.H & Kuiken, F. Evidence on the effectiveness of comprehensive error correction in second language writing. *Language Learning*, 62 (1), 1-41. 2012.
- Ware, P. & Warschauer, M. Electronic feedback and second language writing. In K. Hyland & F. Hyland (Eds.). *Feedback and second language writing. Context and issues* (pp. 105-122). Cambridge: Cambridge University Press. 2006.
- Yuan, Y. The use of chat rooms in an ESL setting. *Computers and Composition*, 20, 194-206. 2003.