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The Effectiveness of Direct and Metalinguistic Written Corrective Feedback to Deal With Errors in the Use of Information-Structuring Connectors

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ABSTRACT

Background. Writing is a complex skill, even more so, if the student does not handle the generic structure of the institutionalized practices imposed on Higher Education.

Purpose. The purpose of this study is to determine the effectiveness of direct and metalinguistic focused written corrective feedback (WCF) on information structuring connectors.

Method. This quantitative study compares focused WCF effectiveness in 39 subjects who are divided into three groups: the first one is the control group, which did not receive feedback, the second is the experimental group 1 that was corrected through direct WCF and the third one corresponds to experimental group 2 that received feedback through metalinguistic cues.

Results. The findings indicate that WCF is effective for the experimental groups. There is a significant decrease in the number of errors of information-structuring connectors in experimental group 2, while experimental group 1 shows a reduction, but without statistical significance. As for the control group, it did not present improvements. In addition, the development of writing tasks corrected through metalinguistic WCF strategies led to textual cohesion improvement with the accurate use of connective devices.

Conclusion. It is important to reflect on the use of focused feedback as part of the writing process, firstly, because writing cannot be taught without reviewing a student's writing, and secondly, considering that focused feedback supports the noticing of errors and decreases teacher correction time.

KEYWORDS

written corrective feedback, information structuring connectors, news

ABBREVIATIONS

WCF (Written corrective feedback), CF (Corrective feedback), L2 (Second language), SLA (Second language acquisition), WC (Written comments), DCF (Direct corrective feedback), ICF (Indirect corrective feedback), L1 (First language), CG (Control group), EGD (Experimental group direct), EGM (Experimental group metalinguistic)

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INTRODUCTION

Corrective feedback (CF) arises as negative evidence from exposure to a language other than the mother tongue, i.e., a learner who is facing the process of learning a Second Language (L2). It is worth mentioning that such evidence in the context of writing practice can be positive or negative; in the former, it only provides learners with models of what is possible and grammatically acceptable; whereas, in the latter, it provides learners with information about what is unacceptable in L2 (Long 1996). At a later stage, Lightbown and Spada (2006) argue that it is not only the teacher who is in charge of making these relevant observations, but also other native or non-native speakers. From the above, it is possible to deduce that CF is a method that can be used both

in formal instructional settings and in natural learning environments.

CF represents a response to a student's inaccurate statement (Ellis et al., 2006; Ellis, 2009), an idea that is also shared by Van Beuningen (2010), who emphasizes that the importance of CF lies in its property of inducing the focus of students' attention to form, so that, according to Sheen (2011, p.1) CF would be "an invitation from the teacher to students to pay attention to the grammatical accuracy of something they have said or written". When considering CF in the area of L2 writing, Coyle and Roca de Larios (2014) specify that feedback is understood as a means to help students improve the quality and efficiency of their texts; while in second language acquisition (SLA), is generally seen as error correction that contributes to students' linguistic development.

From the approaches of L2 and SLA, we can identify feedback as a key element, which relates to the improvement of students' written production, in that sense, by understanding WCF as a pedagogical strategy, it is possible, in the words of Salaberry and Altamirano (2001), to design action plans aimed at achieving learning goals consciously and intentionally. In this context, CF studies arise in the learning and acquisition of second languages (Benson & DeKeyser, 2019); however, approaching feedback as a didactic strategy to improve written production also becomes an opportunity to contribute to the didactics of writing in the first language (L1).

WCF studies in Spanish as an L1 have based their work on providing CF to different grammatical structures to favor error reduction (Ferreira, 2017; Kloss and Ferreira, 2019), and they have also incorporated the concept of Written Comments (WC), which is understood as the process of giving comments to the student, not only from a grammatical perspective but also oriented to text genre (Tapia et al., 2016). From this perspective, WC is understood as an annotation made by the teacher to enable the student to improve his/her written production. In this regard, Bazerman (2004) posits that WC is a pedagogical genre that is part of the writing activity.

For the purpose of this research, we worked with the conceptualization of Written Corrective Feedback (WCF) as proposed by Ellis (2009) but operationalized to Spanish as L1 through two focused WCF strategies. The first one refers to direct WCF in which the teacher identifies the error and provides the student with the correct linguistic form. Ferris (2006) points out that direct CF can be performed in several ways, such as: marking an unnecessary word, phrase, or morpheme; inserting a missing word or morpheme, and writing the correct form on or near the error. The second one refers to metalinguistic WCF, in which the learner is corrected through an implicit metalinguistic comment regarding the nature of the errors the student has made. It is worth mentioning that this technique is less used, as it requires the teacher to have sufficient metalinguistic knowledge to be able to write clear explanations for a variety of errors.

Although it is true that the effects of direct and indirect WCF have been widely studied, it has not yet been robustly determined which strategy is more effective. On this basis, this research also addresses direct WCF, but compares it with metalinguistic CF, considering the relevance of the latter to boost grammatical knowledge (Timofeeva-Timofeev, 2021; Balanga et al., 2016), as well as to generate self-regulation by the student, who must think about the mistake and then attempt its correction, without the teacher providing the correct answer. In this way, scaffolding is generated to aid students to move toward a self-review process (Roger, 2015; Boillos, 2021).

The amount of work around WCF has allowed the construction of an advantageous path that has shown the following:

1) Reformulation, direct corrective feedback (DCF), indirect corrective feedback (ICF), and metalinguistic cues have been effective strategies in Spanish as a foreign language and in English as a foreign language (Ortiz and Ferreira, 2014; Ferreira, 2017; Kloss and Ferreira, 2019).
2) The relative benefits of the different types of feedback are still an unresolved issue.
3) The relative effectiveness of feedback strategies depends on multiple variables, including particular aspects of the language being corrected, the teacher's delivery of the correction, and learner characteristics.

Based on the above, progress has been made in linguistic accuracy with the use of feedback strategies, but this is not enough because there is still no clear knowledge of which strategy would be the most appropriate or effective at each educational level or whether they can be helpful to improve the production of particular genres. Moreover, the studies that have been carried out are mostly focused on English as L1 and L2 and address language structures at the micro level, such as the use of prepositions, number or gender grammatical agreement, use of articles, and morphemes, among others. In this context, it is crucial to study the role of WCF in Spanish as L1 and, as well as, to direct these corrective strategies at a deeper text level (Kloss et al. 2020).

According to Van Dijk and Kintsch's (1983) model, the text is organized into three levels of comprehension: microstructure, macrostructure, and superstructure. The microstructure refers to the local and superficial elements that make a text cohesive, the macrostructure is "a representation of the overall meaning structure of a text" (Van Dijk,1978, p.55). Finally, the superstructure corresponds to "a type of abstract schema that establishes the overall order of a text and is composed of a series of categories, whose possibil-

ities of combination are based on conventional rules" (Van Dijk, 1978, p.144).

In relation to the three levels described above, studies on feedback have proliferated at the first level, that is, the microstructure. Unlike this research, in which the WCF strategy will be aimed at the second level, i.e., the macrostructure, using connective elements that favor the organization of ideas. It is relevant to address these textual elements because they mark on the textual surface the logical relationships that occur between sentences, between textual segments, or between macropropositions so that they can be interpreted as belonging to a larger unit, the text (Montolío, 2014). In addition, they allow the articulation of the textual superstructure, through its chronological narrative texture, which serves to characterize the news as an informative journalistic genre.

Information structuring connectors are mechanisms of textual cohesion, which allow sentences to be connected to each other to clearly understand the discourse. Montolío (2015) exemplifies these relationships:

> *"Soon it will be good weather"- "I will go to the gym every afternoon".*

Not being given additional information, we will not know what the logical-semantic relationship established between sentences is. Then, given the fact that connectors guide inference processes, we can point out that they will function in the text as signals that a writer distributes throughout his discourse so that the reader can interpret the path traced without major complications.

There are different typologies for labeling connecting elements, which in Spanish are organized according to certain features, namely: additive connectors, counter-argumentative, consecutive, causal, and organizers (Portolés, 2014; Montolío, 2015). Therefore, connecting elements contribute to the informative structure of the discourse, adding, contrasting and rectifying information.

The present study contributes to two thematic areas, the first one is the use of WCF in Spanish as L1, and the second one corresponds to feedback provision at a macrostructural level, specially the use of information-structuring connectors, whose function is to organize the text, i.e., to present different thematic aspects in a way that facilitates the reader's interpretation of data. Thus, they mark the logical relationships between sentences on the textual surface, between textual segments, or between macropropositions, so that they can be interpreted as belonging to a larger unit, the text.

The objective of this research paper is to compare the effectiveness of direct and metalinguistic focused written corrective feedback (WCF) in the reduction of errors in the use of information structuring connectors elicited through the writing of the news genre in L1. The hypotheses of the study are formulated as follows:

H1. Direct written corrective feedback represents a strategy that favors the reduction of errors in the use of information structuring connectors in journalistic news / H01. Direct written corrective feedback is a strategy that does not favor the reduction of errors in the use of information structuring connectors in journalistic news.

H2. Metalinguistic written corrective feedback with grammatical description represents a strategy that favors the reduction of errors in the use of information structuring connectors in journalistic news / H02. Metalinguistic written corrective feedback with grammatical description does not represent a strategy that favors the reduction of errors in the use of information structuring connectors in journalistic news.

H3. The control group that did not receive written corrective feedback, but only general comments, reduced the number of errors in the use of information structuring connectors in journalistic news / H03. The control group that did not receive written corrective feedback, but only general comments, did not accurately use information structuring connectors in journalistic news.

METHOD

Study Design

This study presents a longitudinal experimental design because it considers three types of measures: pretest, immediate posttest, and delayed posttest (Bitchener, 2008), through a linguistic intervention focused on informative news writing. One of the strengths of this type of study is the way in which the acquisition of structures is measured, as it incorporates a longitudinal measure of improvement in grammatical accuracy.

The linguistic intervention lasted a total of ten weeks, namely: in week one a pre-test was administered, and writing tasks were carried out from week two to week five. While in week six, an immediate post-test was applied and, finally, in week ten, the delayed post-test was conducted.

Participants

The population consisted of 49 first-year journalism students[1]. However, for measurement purposes, participants were selected according to the following inclusion criteria: 1) Incoming first-year students, i.e., taking the writing course for the first time. 2) Writing task sequence completion, i.e., participation in the 10 sessions that were part of the intervention. 3) Their participation was voluntary after signing an informed consent form.

Finally, according to the inclusion criteria, the sample consisted of 39 students, who were organized into three groups of 13 subjects each.

The selection was random, and three groups were identified: Control Group (CG), which did not receive WCF; Experimental Group 1 (EGD), which received direct WCF; and Experimental Group 2 (EGM), which received WCF through metalinguistic cues (see Table 1). The 39 subjects, whose ages ranged from 18 to 20 years old, wrote the papers in a natural language context, namely, in a writing course taught in the first semester of a journalism course at a Chilean university.

Instruments

The instruments corresponded to three tests that were used to measure students' linguistic accuracy in the use of information structuring connectors on three occasions. The pretest consisted of a writing task of a 400-word news item in the field of politics. To do so, students entered the Moodle platform where the activity was displayed, read the instructions, and wrote their text. This task favored the elicitation of the linguistic connective structures, according to the objective of the study.

Concerning the immediate post-test, students were requested to write a 400-word news item on Chilean public health. The immediate post-test was applied in the sixth week to evaluate the learning of information structuring connectors.

To conclude the linguistic intervention, in the tenth week, the delayed post-test was applied to evaluate long-term retention and transfer of the new knowledge acquired during the different interventions of the treatment. In this case, the students wrote a 400-word news item on a science topic on water resources in Chile. Table 2 shows the summary of the three measurement tests.

Description of the Treatment Tasks

The writing tasks were implemented on a Moodle learning management platform. In this environment, activities were devised to encourage news writing. The researchers selected this journalistic genre because it allows, according to its narrative-descriptive discursive texture, to elicit the use of information structuring connectors.

After the pre-test, a five-week treatment process was carried out. Figure1 shows the sequence of each of the writing sessions. It is worth mentioning that the treatment tasks were the same for the three groups and were applied for 5 weeks, following a linear structure of beginning, development, and closing in each class. After the post-test was applied, students work on reading and vocabulary exercises (weeks 7-9). Finally, a delayed post-test was given to students three weeks after the post-test (week 10).

Figure 1 presents the phases of each class session. This was divided into three stages, the initial phase, previous knowledge related to the writing task is activated, and grammatical scaffolding is provided through brief exercises on the platform, such as: rearranging sentences in a text, sentence completion and determining textual cohesion. In the second phase, students wrote a news-type informative text. Finally, in the third phase, students are guided to metacognitive reflection answering questions about what they had learned during the class or about what content had been complex. Some of the questions were: What did you learn today about the function of connective elements? Was there any topic that was difficult for you and that you need to continue working on? What did you learn today? among others. It is worth mentioning that this class cycle was repeated during all the writing sessions, that is, once a week, as part of the linguistic intervention.

Correction of Writing Tasks

During the five-week intervention process, students wrote a weekly news item, which was checked by the teacher in charge of the course and two research assistants. Each of them individually corrected between 12 and 15 texts per week, and then the team met to agree on the criteria for the correction provided to each student, according to the WCF strategies chosen to be applied to this intervention. The pro-

1 These students completed 12 years of formal education (primary and secondary). According to the Ministry of Education (Ministerio de Educación, 2021), these students should be able to: (1) produce coherent and cohesive written texts to communicate their analysis and interpretations of texts, state their position, and explore creatively with language; (2) apply a writing process according to their purposes, the selected discursive genre, topic, and audience; (3) adapt the text to genre convention, and the audience's characteristics (knowledge, interests, cultural conventions). Ministerio de Educación. (2021). Objetivos de aprendizaje de la asignatura Lengua y literatura para 4° medio [Learning objectives for Language and Literature for 4th grade]. https://www.curriculumnacional.cl/614/articles-40135_programa_feb_2021_final_s_disegno.pdf

Table 1
Participant Identification

Groups	Identification	Type of feedback received
CG	Control Group	Received general comments, such as: "well done", "you need to improve", "good idea, keep on working".
EGD	Direct WCF	Received explicit comments regarding the correct connector that was needed in the text, e.g, "there, you should have used however, not but."
EGM	Metalinguistic FCF	Received metalinguistic WCF comments, such as: "you noticed that you used a marker that expresses beginning with a topicalizing function when you need to conclude your writing. Therefore, you need a connector that allows you to perform a discursive closure, such as epilogue or synthesis".

Table 2
Application of Measurement Test (Own Elaboration)

Evaluation moment	Week	Field	Task	Length	Time	Place
Pre-test	1	Politics	Informative text	400 words	90 min	Computer Lab
Post-test	6	Health	Informative text	400 words	90 min	Computer Lab
Delayed post-test	10	Science	Informative text	400 words	90 min	Computer Lab

cedure for delivering the WFC for each of the experimental groups was as follows:

- The three specialists checked the texts and gave direct feedback to experimental group 1, metalinguistic feedback to experimental group 2, and general comments to the control group. It should be noted that all groups performed the same tasks.
- The day before a new writing task was assigned, the correction of the previous task was released on the Moodle platform, which students reviewed, and about which they wrote down their doubts regarding the feedback in the class forum. These concerns were resolved by the responsible researcher on the same day. The review of the feedback was mandatory for all students.
- Students started a new text, and once they did that, they were not allowed to access to the previous assignment or the feedback again.
- This process was repeated in the 5 sessions of treatment, as students wrote new texts in each class.

Data Analysis Procedure

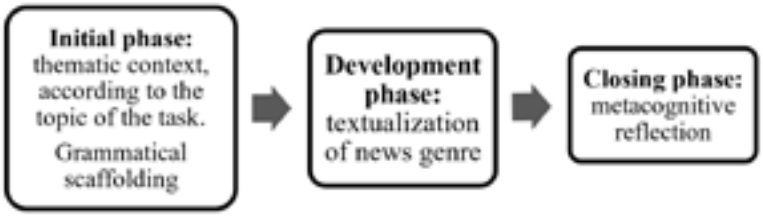
In order to analyze the pre, post and delayed post-test results, errors made by the students were counted. Cassany (2014) points out that the error is the product of a defect in linguistic competence: errors are made when the writer does not know a grammatical rule, a word, among others. Therefore, measuring errors makes it possible to examine the degree of accuracy with which students use a linguistic element. In this case, the measurement of errors shows the level of performance in the use of information structuring connectors.

To ensure the validity of the procedure and avoid bias, the research team agreed on the criteria for error identification, and also met to review the tests together.

RESULTS

The experiment included an independent and a dependent variable; the independent variable corresponds to each of the three groups (two experimental and one control), and

Figure 1
Class Cycle (own elaboration)



the dependent variable refers to the difference in the decrease of the errors focused on in this study, that is, the use of information structuring connectors when comparing the pre-test, the immediate and delayed post-tests.

Counted errors were processed and analyzed with the Statistical Package for the Social Sciences (SPSS) program. This program allows us to examine both the frequency distributions for each variable and the relationships between them. The relevant statistical models for this study correspond to the one-factor ANOVA parametric tests. Once this test was applied, a T-test for related samples was used.

The Measure of Central Tendency, Frequency, and Perentages for the Pre-Test

Once the pretest was applied to each of the sample groups, it could be established that group EGM presented an average of 2.77, with a minimum of 1 and a maximum of 4 errors, and a deviation of 1.23 dispersion units in relation to the average value. Group EGD, meanwhile, obtained an average of 1.92 errors with a minimum of 0 and a maximum of 3. The deviation for this group was 1.08 dispersion units. Group CG, finally, showed an average of 2.08 with a minimum of 1 and a maximum of 4 errors. Its deviation was 1.115 dispersion units. From an analytical point of view, it can be said that, when comparing the three groups based on the standard deviation, the dispersion behavior of the data distribution is similar, which indicates that, despite presenting different averages, recurrence of errors appears regularly in the time and space of the research.

However, when calculating Spearman's variation, which seeks to measure the magnitude of the variability of the distribution between groups, group EGM in comparison with group EGD showed a difference of 1.21%, indicating that there is almost twice that of group EGM over group EGD. Group EGM differed from group CG by 1.20%. Finally, when group EGD and group CG were compared, the difference increased slightly, with a coefficient of 0.99%.

In relation to the frequencies and their graphical expression in percentage, it was observed that out of the 39 participants of the pre-test 15.38% of participants made 4 errors, 30.71% failed 3 times, 23.07% on 2 occasions, 25.64% made 1 error and 5.12% had 0 error. Figure 2 shows the distribution of errors and shows that most of the evaluated individuals made between 1 and 3 errors, which represents 79.47% of the total population.

After the linguistic intervention was administered, the students took an immediate post-test (week six). The results of the central tendency analysis indicated the following: Group EGM presented an average of 0.46 errors with a minimum of 0 and a maximum of 2 faults, with a deviation of 0.660 units of dispersion in relation to the average value. Group EGD, meanwhile, obtained an average of 1.85 errors with a minimum of 0 and a maximum of 4. The deviation for this group was 1.11 dispersion units. Finally, Group CG, showed an average of 2.54 with a minimum of 1 and a maximum of 5 errors. The observed deviation was at 1.26 dispersion units.

When the groups were compared based on the standard deviation, the dispersion behavior in the data distribution was moderately similar, which indicates that despite showing ~~a~~ group EGM distanced from group EGD and GC (EGD and CG tending to be similar), the results were rather homogeneous. However, when calculating Spearman's variance, group EGM in comparison with group EGD shows a difference of 0.42%, indicating that there is a short gap, less than one in the number of times, of group EGM over group EGD. Similarly, group EGM differs from group CG by 0.35%. Meanwhile, when group EGD and group CG are compared, the difference increases, with a coefficient of 0.98%.

When observing the frequencies and their percentual expression (figure 3), of the total of the subjects, 2.56% made 5

Figure 2

Measure of Central Tendency, Frequency, and Percentages for the Pre-Test

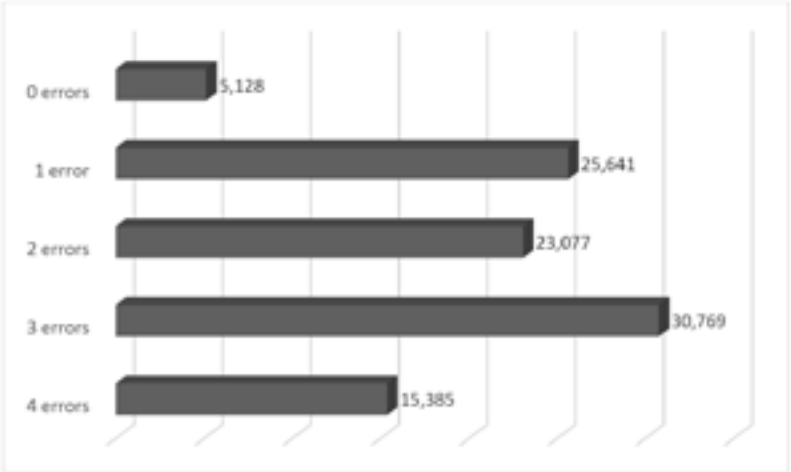
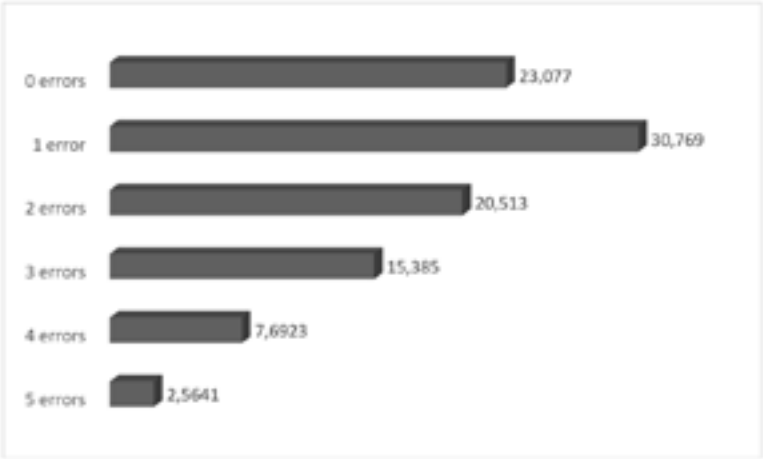


Figure 3

Measure of Central Tendency, Frequency, and Percentages for Immediate Post-Test



errors during the immediate post-test, 7.89% failed 4 times, 15.38% on 3 occasions, 20.51% made 2 errors, 30.76% made 1 error and 23.07% had 0 error. Most of the evaluated participants during this stage of the investigation had between 0 and 2 errors approximately, which represented 74.34%.

With respect to the analysis of central tendency carried out on the data obtained from the application of the delayed post-test to the sample, the results were as follows: Group EGM presented an average of 0.31errors with a minimum of 0 and a maximum of 1, and a deviation of 0.48 dispersion units in relation to the average value. Group EGD, meanwhile, obtained an average of 1.92 errors with a minimum of 0 and a maximum of 3. The deviation for this group was 1.11 dispersion units. Group CG, finally, showed an average of 2.85 with a minimum of 1 and a maximum of 6 errors. Its deviation was 1.51 dispersion units.

When the groups were compared based on the standard deviation, the dispersion behavior of the data distribution showed a difference between Group EGM and Group EGD in the same way that Group EGD distances itself from CG. Group CG dispersed from EGM twice EGD approximately, indicating that the recurrence of errors appears regularly in the time and space of the research. When calculating Spearman's variance group EGM compared to group EGD, it shows a difference of 0.37%. Group EGM differed from group CG by 0.34%, exhibiting a close relationship. When group EGD and group CG were compared, the difference increased by 0.92%.

When observing the frequencies and the percentual expression of the total number of participants, 2.56% made 6 mistakes, 2.56% did in 5 times, 5.12% on 4 occasions, 17.94% 3 times, 23.07% failed 2 times, 20.51% failed 1 time and 28.20% had 0 error. Figure 4 below shows the descriptive distribution of the results, highlighting that most of the individuals evaluated during this stage of the research were found to have between 0 and 2 errors approximately, representing 71.78% of the population.

Analysis of Results in the Use of Information Structuring Connectors

To analyze the presence of information structuring connectors in the news, the measure of analysis used was the counting of errors made by the students. This measure examines the degree of accuracy with which students use the selected linguistic form, i.e., discourse markers with organizational value. Table 3 presents the total number of errors in the use of connective elements used in the writing of news items in the pretest, immediate post-test, and delayed posttest.

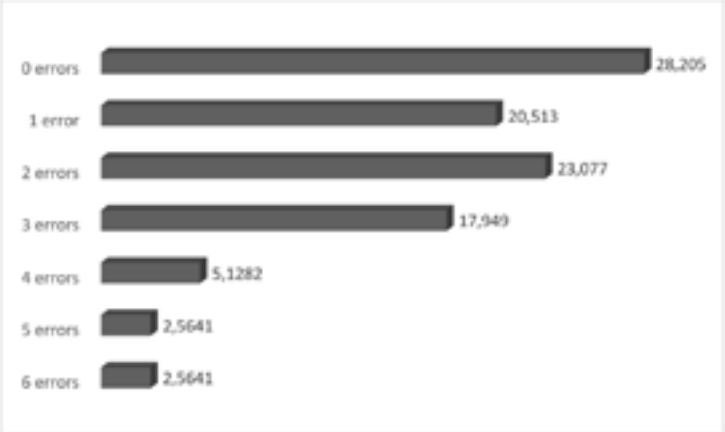
Table 3, in the second row, shows the intervention groups: control group, which received no feedback but a general comment, experimental group GD, which received direct feedback, and group GM, which received feedback through metalinguistic cues.

The total number of errors of the three groups in the pretest corresponded to 88, while, in the second measurement, the errors decreased to 63 and, in the last measurement, the errors increased slightly to 66. This is because GM decreased its errors in the use of connectives, but the control group increased considerably.

The errors committed by EGM decreased from 36 in the first instance to 6 in the post-test, by the end of the intervention, producing only 4 errors (delayed post-test). In this sense, these results are related to those found by Kloss et al. (2020), who indicate that implicit correction is adequate for the student to notice and repair his errors. Therefore, the metalinguistic strategy specifies the importance of reflection within the correction, which ensures that error repair is maintained in the long run.

Figure 4

Measure of Central Tendency, Frequency, and Percentages for Delayed Post-Test



Data Normalization

Once the uses of information structuring connectors were counted, we worked only with the errors made by the students in the three measurements. However, for the purpose of data normalization, a range of values was established that were later introduced into the SPSS statistical software. Ranges: 0 errors: 0/ 1 error: 1/ 2 errors: 2/ 3 errors: 3/ 4 errors: 4/ 5 errors: 5/ 6 errors: 6.

According to the KS normality test the data are normally distributed, therefore, the assumption of normality is confirmed in the three group -group CG- experimental 1 -group EGD- and experimental 2 -group EGM- (Statistics at .071 and .200*; gl:13; p>0.5).

The second assumption of normality corresponds to the independence of the observations: at this point it can be argued that the individuals composing the groups are different. Then, in the third assumption, regarding the equivalence of groups, the sample sizes are equal in each group, which ~~it~~ is an indication that there is an equivalence of groups in the populations. In this sense, the test of independence of observations and the test of equivalence are verified.

Test for Homogeneity of Variance

Once the data were normalized, the test for homogeneity of variance was applied to the pre-test.

The LEVENE homogeneity of variance test indicates that the assumption is met (Statistic .454; gl1:2 and gl2:36; p> a .05).

One-Factor Analysis of Variance

To compare the average of the three groups that make up the experiment, a one-way ANOVA was used to test the difference between the averages of the groups compared.

On the one-way ANOVA test, as the research hypothesis is that there is a difference, then the null hypothesis is that

Table 3

Total Errors of Information Structuring Connectors Used in the Study: Pre-Test, Post-Test, and Delayed Post-Test

Evaluation moment	Pre-test				Immediate post-test				Delayed post-test			
Groups	CG	EGD	EGM	**total**	CG	EGD	EGM	**total**	CG	EGD	EGM	**total**
Nº errors	27	25	36	**88**	33	24	6	**63**	37	25	4	**66**
Total %	**30,7**	**28,4**	**40,9**	**100**	**52,4**	**38,1**	**9,5**	**100**	**56**	**37,9**	**6,1**	**100**

Table 4

Normality Tests

Statistical study groups		Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistics	**gl**	**Sig**	**Statistic**	**gl**	**Sig**	
Pre-test	Group EGM	,225	13	,071	,827	13	,014
	Group EGD	,235	13	,048	,851	13	,029
	Group CG	,181	13	,200*	,938	13	,436

Table 5

Test for Homogeneity of Variance

Levene Statistic	gl1	gl2	Sig.
,454	2	36	,638

Table 6

One-Way ANOVA for the Three Measurements

		Sum of squares	df	Mean square	F	Sig.
Pre-test	Between groups	5,282	2	2,641	2,060	,142
	Within groups	46,154	36	1,282		
	Total	**51,436**	**38**			
Post-test	Between groups	29,077	2	14,538	13,034	,000
	Within groups	40,154	36	1,115		
	Total	**69,231**	**38**			
Delayed post-test	Between groups	42,923	2	21,462	17,024	,000
	Within groups	45,385	36	1,261		
	Total	**88,308**	**38**			

Table 7

Multiple Comparisons

Tukey's HSD			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
Dependent variable	**(I) Study groups**	**(J) Study groups**	**Lower Bound**	**Upper Bound**			
Pre-test	EGM	EGD	,846	,444	,152	-,24	1,93
		CG	,692	,444	,276	-,39	1,78
	EGD	EGM	-,846	,444	,152	-1,93	,24
		CG	-,154	,444	,936	-1,24	,93
	CG	EGM	-.692	,444	,276	-1,78	,39
		EGD	-154	,444	,936	-,93	1,24
Post-test	EGM	EGD	-1,385*	,414	,005	-2,40	-,37
		CG	-2,077*	,414	,000	-3,09	-1,06
	EGD	EGM	-1,385*	,414	,005	,37	2,40
		CG	-,692	,414	,230	-1,70	,32
	CG	EGM	2,077*	,414	,000	1,06	3,09
		EGD	,692	,414	,230	-,32	1,70
Delayed post-test	EGM	EGD	-1,615*	,440	,002	-2,69	-,54
		CG	-2,538*	,440	,000	-3,61	-1,46
	EGD	EGM	1,615*	,440	,002	54	2,69
		CG	-,923	,440	,105	-2,00	,15
	CG	EGM	2,538*	,440	,000	1,46	3,61
		EGD	,923	,440	,105	-,15	2,00

there is no difference between groups. The significance is above .05 (p<.142) in the pretest, which indicates that before the treatment there is no difference. However, in the immediate post-test and delayed post-test, there are differences between the groups, due to the effect of the treatment.

Therefore, the null hypothesis is rejected and the research hypothesis is accepted, i.e., there is a difference between the groups for the immediate post-test (F(13.034); p<.000) and the delayed post-test (F(17.024); p<.000).

A Tukey's post hoc test was applied to determine whose group's means are significantly different from other group means.

According to Tukey's post-hoc test, it is observed that significant differences are found in the metalinguistic group (EGM), which is presented with a significance .152 in the pre-test, .005 in the immediate post-test, and .002 in the delayed post-test.

As it can be seen, differences are found between the groups that received and did not receive treatment. However, significant differences are only present in the metalinguistic group (p<.05).

T-Test for Independent Samples

Once the normality of the data has been evaluated, the t-test for independent samples is carried out.

Table 8 presents the descriptive statistics for each of the groups being compared. In this table, we analyzed whether the group averages are in accordance with the research hypothesis. In this case, the averages of the two groups were consistent with the research hypothesis, i.e., there are differences. Therefore, we proceed to analyze the results of the student t-test to determine the statistical significance of the difference between these averages.

In analyzing table 9, we first proceed to evaluate the assumption of equal variances between the groups being compared. In the pre-test, there is no significant difference between the groups p.05. So, the variances of both samples are equal. Regarding the immediate post-test p<.05. Therefore, the results in favor of the metalinguistic strategy are demonstrated, as well as in the delayed post-test p<.05.

In relation to the hypotheses proposed in this study, we can point out that hypotheses 1 and 2 are proven since there is a difference between groups that received feedback (EGD and EGM). Therefore, metalinguistic feedback has significant results in the short and long term over the control group that did not receive feedback and the experimental group 1 (EGD) that was corrected through direct feedback.

Table 8

Group Statistics

	Study groups	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	EGM	13	2,77	1,235	,343
	EGD	13	1,92	1,038	,288
Post-test	EGM	13	,46	,660	,183
	EGD	13	1,85	1,144	,317
Delayed post-test	EGM	13	,31	,480	,133
	EGD	13	1,92	1,115	,309

Table 9

Independent Samples Test

		Levene's Test for Equality of Variances		T-test for Equality of Means				
		F	Sig	t	df	Sig. (2-tailed)	Mean Differ	Std. Error Differ
Pre-test	Equal variances assumed	,787	,384	1,891	24	,071	,846	,447
	Equal variances not assumed			1,891	23,307	,071	-846	,447
Post-test	Equal variances assumed	3,913	,059	-3,781	24	,001	-1,385	,366
	Equal variances not assumed			-3,781	19,200	,001	-1,385	,366
Delayed-post-test	Equal variances assumed	5,883	,023	-4,797	24	,000	-1,615	,337
	Equal variances not assumed			-4,797	16,305	,000	-1,615	,337

Therefore, to respond to our research objective, it can be argued that the most effective strategy to reduce errors in the use of information structuring connectors in news writing is the focused metalinguistic written corrective feedback. While the direct strategy used in EGD showed some improvement, it did not show statistically significant differences as did the control group.

DISCUSSION

When focusing on the results of the linguistic intervention, they demonstrate the effectiveness of the metalinguistic WCF in the use of information structuring connectors (Bozorgian & Yazdani, 2021; Pourdana, et al., 2021), but before just addressing the statistical significance of the results, it is important to consider that the strategy was favorable in the research context, that is, first-year university students. Because, although some research demonstrates the effectiveness of this type of feedback in elementary education (Timofeeva-Timofeev, 2021); we consider that the success of the metalinguistic strategy was due to the academic context (Valizadeh, 2022) and to the use of writing tasks that elicited a reflective mastery of language.

One recommendation for the metalinguistic WCF strategy to be fully useful is that students who are given feedback through cues should have an adequate grammatical level to understand the information provided, otherwise their linguistic accuracy will not improve because they will probably be unable to understand the feedback. On that basis, we consider it is important not to deliver a strong recommendation on the effectiveness of one strategy over the other, but rather to examine students` characteristics, to know how they feel when they receive the written comments with the purpose of selecting a relevant strategy. This should point towards reflection so that the student develops critical reading of their work, strengthening the process of self-regulation (Gallego et al., 2015). The importance of this point lies in the fact that pedagogical choices should be adjusted to the students`needs as writers (Myhill et al., 2018).

Another element to consider in this research is the use of focused feedback. Specialists in the field (Bitchener & Knoch, 2008; Ellis et al., 2008) state that giving feedback on all the errors in a text is not beneficial, since the student does not fully understand or process all the information provided by the teacher. In addition, developing a focused revision allows working on written production on a constant basis during classes, even when the number of students is too large since the teacher concentrates on reviewing a limited number of grammatical forms. In addition, this focusing strategy allows the teacher to correct errors accurately and in a timely manner, and students are empowered to notice the CF by focusing their attention to those forms that are wrong or inappropriate to promote the necessary linguistic adjustments to facilitate learning.

As for direct WCF, the results show that it is not effective, since students did not reduce errors in the use of information structuring connectors when corrected through this strategy, which is in line with Ferris and Robert (2001) and Sheen (2011), who argue that implicit WCF is more effective because it helps students correct errors in activities that deal with problem-solving, while direct WCF does not favor the retention of the corrected forms in the long term.

Another important aspect when providing feedback is to determine the error or errors to be addressed. In this study, we selected information structuring connectors because they are a key element to guide the organization of informative texts with narrative texture, such as news reports. Thus, we point out that the textual superstructure must be related to the form of treatment that will be selected to facilitate the elicitation of this language structure.

Finally, it is important to mention that the writing tasks were mediated in a technological context because considering the time of isolation suffered by the world due to the COVID-19 pandemic, and the changes to which student training was subjected; working with a digital platform allows for the generation of meaningful learning, despite the modality in which it is taught. Likewise, another advantage of working with the Moodle platform lies in the correction process carried out by the teacher, who can submit written comments to each text, and which in turn can be immediately reviewed by the student.

CONCLUSION

In relation to the objective of this study, we can point out that the results of the effects of WCF are encouraging. The development of writing tasks corrected by means of metalinguistic strategies leads to writing improvement with higher accuracy levels in the use of information structuring connectors in the long-term. This is in line with previous studies (Bozorgian & Yazdani, 2021; Pourdana, et al., 2021), that have compared direct and indirect metalinguistic strategies, concluding the supremacy of the latter.

Regarding the research hypotheses, we were able to verify that the most effective strategy for error reduction of information structuring connectors is the use of metalinguistic cues, therefore, we corroborated that there are differences between groups and that the group that was corrected by means of metalinguistic WCF would present a greater reduction in the number of errors, which was verified with statistical significance. According to the WCF strategies used, we were able to confirm that providing feedback leads to an improvement in the use of the selected grammatical form.

The design of the linguistic intervention corresponds to a work plan which requires students to focus their attention to meaning mainly, by making use of their available linguis-

tic resources (Estaire, 2011), thus joining the students 'need to produce texts in a specific and appropriate context, understanding the natural environment in which a journalism students develop and at the same time fostering connective elements learning to favor text writing. Given the linguistic intervention and the characteristics of the sample, we can point out that the implicit strategy is the most adequate for this discursive genre and for this linguistic form, which was evidenced in the increase in favor of the metalinguistic strategy in the immediate post-test and in the delayed post-test. Regarding the sample, we outline the following reflection, metalinguistic feedback is relevant to this group of university students, who have finished their twelve previous years of schooling, in the form of grammatical scaffolding to understand the clues provided by the teacher. It is worth mentioning that the effectiveness of this strategy should be investigated more accurately in younger students with less grammatical proficiency

It should be noted that the results show the effectiveness of metalinguistic cues as opposed to direct correction. This is interesting because teachers mostly focus their efforts on giving explicit feedback (Lee, 2003; Lee 2004; Quintanilla et al., 2018; Kloss & Ferreira, 2019), that is, they tend to correct the errors by providing the correct answer, which leads us to reflect on two axes: first, the effectiveness of the strategy used, and second, teachers' knowledge regarding error correction.

The empirical evidence obtained in this study suggests that there are statistically significant results that support conclusions generalizable to other settings, i.e., the increase in the means achieved by EGM shows an improvement in the accuracy of the studied form. This result supports the use of implicit WCF as a facilitating technique for improving the use of information structuring connectors in L1, thus providing evidence about the usefulness of the strategy used for learning journalistic writing, thus confirming our research hypothesis about the effectiveness of focused metalinguistic WCF.

The pedagogical contributions of this study evidence that metalinguistic WCF is a technique for correcting written errors that aids in the improvement of the accurate use of information structuring connectors. This methodological strategy allows addressing the grammatical treatment of certain linguistic forms. Also, the development of writing as a productive skill and as a means for learning emerges as a highly pertinent complementary option for large classes. Finally, the focused metalinguistic WCF represents a technique that facilitates the teaching task, since it demands self-repair on the part of the student.

The limitations of this study reveal that WCF is still a controversial topic that can be studied from different fields, whether it is the genre format or the variation of the grammatical form(s) under study. In this sense, as a projection, it would be appropriate to expand this corrective strategy to other contexts. Likewise, the guidelines for feedback should not only focus on teacher correction (Quintanilla et al., 2018; Andújar & Cañada, 2021) but also move towards self-revision and peer evaluation (Gravett & Kinchin, 2020; Kloss & Quintanilla, 2020). Several researchers (Roger, 2015; Boillos, 2021) suggest that peer review is reasonable and successful, so from the didactics of writing these methodological models should be incorporated to be tested and replicated in the classroom.

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DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTION STATEMENT

S. Kloss: conceptualization, data curation, methodology & writing original draft.

A. Q. Espinoza: conceptualization, conclusions, writing-review & editing.

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