



The relative effectiveness of different types of direct written corrective feedback

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Abstract

The effectiveness of different types of written corrective feedback has been investigated over the last twenty years but it is still not possible to make firm conclusions about which options are the most beneficial to ESL learners. This article first provides an overview of the currently available research findings and then presents the results of a six month study of the relative effectiveness of providing thirty-nine low intermediate ESL learners in Auckland, New Zealand, with three different direct written corrective feedback options. Assigned to three groups (direct corrective feedback, written and oral meta-linguistic explanation; direct corrective feedback and written meta-linguistic explanation; direct corrective feedback only), the subjects produced four pieces of writing (pre-test, immediate post-test, and two delayed post-tests). Two functional uses of the English article system (referential indefinite “a” and referential definite “the”) were targeted in the feedback. No difference in effect upon accuracy was found between the three treatment options, suggesting that the provision of error correction alone may be sufficient for learners at a low intermediate proficiency level.

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1. Introduction

Despite the call for empirical evidence of the efficacy of written corrective feedback by Truscott (1996, 1999), a number of researchers, assuming the practice is effective in helping ESL learners improve the accuracy of their writing and develop mastery over the use of linguistic features in situations where errors frequently occur (evidenced by improvements in the writing of new texts over time), have proceeded to investigate the relative effectiveness of different types of direct and indirect written corrective feedback. Given the conflicting results to date, it is important that further research be conducted in order to see if some types of feedback are more repeatedly effective than others. The aim of this article is to outline the major findings of studies that

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have so far been reported and to present the findings of part of a larger study into the relative effectiveness of three direct feedback options. The present study investigated the effect of three direct feedback options that are typically practiced in ESL classrooms as thirty-nine low intermediate ESL learners wrote four picture descriptions over a six month period.

2. Empirical research findings on the relative effectiveness of different types of written corrective feedback

A range of studies have investigated whether certain types of written corrective feedback or combinations of different types are more effective than others. These studies have most often categorized feedback as either direct (explicit) or indirect (implicit). *Direct* corrective feedback may be defined as the provision of the correct linguistic form or structure by the teacher to the student above the linguistic error (Ferris, 2003). It may include the crossing out of an unnecessary word/phrase/morpheme, the insertion of a missing word/phrase/morpheme, or the provision of the correct form or structure. Additional forms of direct feedback may include written meta-linguistic explanation (the provision of grammar rules and examples at the end of a student's script with a reference back to places in the text where the error has occurred) and spoken meta-linguistic explanation (e.g. a mini-lesson where rules and examples are presented, practised and discussed; one-on-one individual conferences between teacher and student or conferences between teacher and small groups of students). On the other hand, *indirect* corrective feedback is that which indicates that in some way an error has been made without explicit attention drawn (Ferris, 2003). This may be provided in one of four ways: underlining or circling the error; recording in the margin the number of errors in a given line; or using a code to show where the error has occurred and what type of error it is (Ferris and Roberts, 2001; Robb et al., 1986). Rather than the teacher providing an explicit correction, students are left to resolve and correct the problem that has been drawn to their attention.

Those who suggest that indirect feedback is more effective than direct feedback argue that it requires students to engage in guided learning and problem solving and, as a result, promotes the type of reflection, noticing and attention that is more likely to foster long-term acquisition (Ferris and Roberts, 2001). On the other hand, three main arguments have been presented in support of more direct types of feedback (Chandler, 2003). First, it has been suggested that direct feedback is more helpful to students because it reduces the type of confusion that can occur if learners fail to understand or remember what the feedback is saying. For example, in situations where error codes are provided, it is argued that students may not always understand or remember what they refer to. The second argument in support of direct feedback is that it provides learners with sufficient information to resolve more complex errors (for example, errors in syntactic structure and idiomatic usage). The third advantage that has been identified concerns the belief that direct feedback provides learners with more immediate feedback on hypotheses that they may have made.

Studies that have investigated the relative merits of these approaches can be grouped according to those that have compared direct and indirect types of written corrective feedback, those that have compared different types of indirect feedback, and those that have compared different types of direct feedback. In studies that have compared direct and indirect approaches, two (Ferris and Helt, 2000; Lalande, 1982) have reported an advantage for indirect feedback, two (Robb et al., 1986; Semke, 1984) have reported no difference between the two approaches, and one (Chandler, 2003) has reported positive findings for both direct and indirect feedback. Clearly, firm conclusions cannot be made from these conflicting results. By comparison, it is interesting to note that even though many findings from oral corrective feedback studies in SLA research point to an advantage for direct over indirect corrective feedback (Carroll, 2001; Carroll and Swain, 1993; Ellis et al., 2006; Havranek and Cesnik, 2003; Lyster, 2004; Muranoi, 2000; Nagata, 1993; Rosa and Leow, 2004), there are others (DeKeyser, 1993; Kim and Mathes, 2001; Leeman, 2003) that claim the opposite. As well as comparing direct and indirect approaches, several other studies (Ferris et al., 2000; Ferris and Roberts, 2001; Robb et al., 1986) have investigated the relative effectiveness of different types of indirect feedback (coded and uncoded) but none has found any difference between the two options.

Less attention has been given to a comparison of different types of direct feedback. Bitchener et al. (2005) compared the effect of different direct feedback combinations typically practised in advanced proficiency classroom settings: direct correction plus oral meta-linguistic explanation in the form of five minute one-on-one conferences; direct error correction; no corrective feedback. They found that group one (direct error

correction and oral meta-linguistic explanation) outperformed group two (direct error correction only) and the control group for the past simple tense and the definite article but not for prepositions. They suggest that the addition of oral meta-linguistic explanation may have been the crucial factor in facilitating increased accuracy. Bitchener (2008) investigated the effectiveness of other direct feedback combinations (direct error correction with written and oral meta-linguistic explanation in the form of a thirty minute classroom lesson; direct error correction with written meta-linguistic explanation; direct error correction; no corrective feedback) on only two functional uses of the English article system (indefinite ‘a’ for first mention and definite ‘the’ for subsequent mentions) with seventy five low intermediate, international visa ESL students. Group one (direct error correction and written and spoken meta-linguistic explanation) and group three (direct error correction only) outperformed the control group while group two (direct error correction and written meta-linguistic explanation) only just failed to do so. When the study was extended (Bitchener and Knoch, 2008) to include 144 international visa and migrant ESL students, no difference was observed between the same three treatment combinations. It is possible that the larger sample size eliminated the difference in effect between group two and the other two treatment groups in Bitchener (2008). Sheen (2007) investigated the relative effect of two types of direct feedback (error correction and written meta-linguistic explanation) with ninety-one intermediate ESL learners and found no difference between the two feedback options in her immediate post-test but an advantage for written meta-linguistic explanation over direct error correction in the delayed post-test conducted two months later.

Considering these four studies, it seems that there may be an advantage for meta-linguistic explanation over direct error correction alone. Bitchener et al. (2005) and Sheen (2007) both found this to be the case but it is noteworthy that this only became evident in the delayed post-test conducted by Sheen two months later. On the other hand, Bitchener (2008) and Bitchener and Knoch (2008) found no advantage for those who received meta-linguistic explanation after a similar two month period. It is possible that this difference may have resulted from intervening factors such as type, amount and delivery of meta-linguistic explanation, and other contextual variables. Further research that addresses these factors over a more extensive period of time may enable firmer conclusions to be drawn. Such was the motivation for the following study.

3. The study

3.1. Introduction

The aim of the study was to discover if there is a differential effect on accuracy for three different direct written corrective feedback options over a six month period. The following research question was investigated:

Does accuracy in the use of two functions of the English article system vary according to the provision of direct written corrective feedback, spoken and written meta-linguistic explanation?

Accuracy in using the two functions was measured by means of a pre-test post-test design (a pre-test at the beginning of the six month period and post-tests after two weeks, two months and six months). Three groups of low intermediate ESL learners took part in the study: group one received direct error correction (the correct form placed above each incorrect use) as well as written and oral meta-linguistic explanation; group two received direct error correction and written meta-linguistic explanation; group three received direct error correction.

3.2. Participants

The study was conducted in the English Language Department of a university in Auckland, New Zealand. Thirty-nine students from three intact low intermediate classes were invited to take part in the study. Students who were new to the university were assigned to a proficiency level after taking a standardized grammar test, a writing test and a one-on-one interview. Students who had previously been studying at a lower proficiency level were placed in the low intermediate level on the basis of earlier competency-based assessments. The English Language Department describes its approach to the teaching of English as communicative, with instruction being provided in reading, writing, speaking and listening. Most of the students were migrants who had settled in New Zealand within eighteen months of commencing study at the low intermediate level. Four hours

of instruction were provided five days a week. The students (12 males and 27 females) were predominantly from East Asian countries: Korea (13%), Japan (11%), China (21%). Other countries represented were Vietnam, Russia, Saudi Arabia, Chile, Brazil, Turkey, Somalia, Romania, Iran, India and Indonesia. The average age of the students was 33.4 years. The majority (74%) claimed to have had formal instruction in grammatical form and structure though their length of earlier study varied across a seven year period. The three classes were arbitrarily assigned to the three treatment groups. Each group comprised 13 students.

3.3. Target structures

Compared with earlier studies on the value of written corrective feedback (see Ferris, 2003), where sometimes as many as fifteen linguistic forms and structures had been examined, this study investigated the effect of targeting two functional uses of the English article system: the referential indefinite article “a” for initial referent and the referential definite article “the” for subsequent mention. Other functional uses of the definite and indefinite articles were not targeted in the study. These structures were targeted because students across English language proficiency levels experience difficulty in the use of the English article system (Bitchener et al., 2005; Butler, 2002; Master, 1995). For example, they may experience difficulty deciding whether an article is required and, if it is required, whether it should be the definite or indefinite article. Accuracy in the use of these functions in the pre-test revealed a mean score of 59.41%, thereby indicating that students at a low intermediate level have only a partial mastery of the functions.

3.4. Treatment

Group one received direct error correction directly above each functional error on the page as well as written and oral meta-linguistic explanation. Direct error correction involved placing a tick or check above correct uses of the two functions, correcting incorrect uses with ‘a’ or ‘the’ above each error, and inserting ‘a’ or ‘the’ where they were omitted but required. The written meta-linguistic explanation included a simple explanation of the two targeted functional uses of the definite and indefinite articles together with an example of their use. Attached to their pre-test pieces of writing, the students received the following explanation and illustration:

1. Use ‘a’ when referring to something for the first time.
2. Use ‘the’ when referring to something that has already been mentioned.

3.5. Example

A man and a woman were sitting opposite me. The man was British but I think the woman was Australian.

Attention was drawn to this information at the relevant places on the student’s writing. Oral meta-linguistic explanation took the form of a 30 minute mini-lesson. During this lesson, the researcher explained the meta-linguistic information (rules and example) attached to the students’ returned text. Additional examples were illustrated on the whiteboard and discussed with the class. The students were then given a short ‘controlled practice’ exercise and asked to fill the gap in each sentence with ‘a’, ‘the’ or neither. They were given five minutes to complete the exercise. The lesson concluded with a plenary discussion of the answers. Group two received direct error correction above each functional error and written meta-linguistic explanation. Group three only received direct error correction above their errors. Each group comprised the members of one class. Each group met as a class five mornings a week over a semester. Feedback was only provided in the treatment session that took place a week after the pre-test and on the same day as the immediate post-test.

3.6. Instruments

Each of the four pieces of writing required a description of what was happening in a given picture (at the beach; at a picnic; at a camp site; at a family gathering). Picture descriptions were chosen because the range of

people, objects and activities illustrated had the potential to create obligatory opportunities for the use of both English article functions. Because the students were at a low intermediate level of proficiency, some of the key vocabulary items (concrete nouns) were provided around the margins of each picture with arrows pointing to the relevant person, object or activity. They were also allowed to use dictionaries and ask the researcher for a particular word if necessary. Thirty minutes was given for the writing of each description.

3.7. Procedure

On day one, the pre-test was administered. One week later, the treatment (written corrective feedback) was provided. For group one, the immediate post-test was completed after the students had been given five minutes to consider the error corrections and the written meta-linguistic explanation and had received the 30 min lesson (oral meta-linguistic explanation). For group two, the immediate post-test was completed after the students had been given five minutes to consider the error corrections and the written meta-linguistic explanation. For group three, the immediate post-test was completed after the students had been given five minutes to consider the direct error corrections. The immediate post-test for all groups was returned one week after it had been written. The first delayed post-test was returned to the students one week later. The second delayed post-test occurred after six months.

Teachers of the participants agreed to not provide any explicit instruction (planned or incidental) on the targeted error categories during the period of the study. On the other hand, it is not possible to be certain about the extent to which any participant received additional feedback or instruction on these categories from tutors or others between the data collection sessions. However, we believe that statistical measures were sufficiently robust to counter any effect that may have resulted from any such exposure.

3.8. Analysis

Obligatory uses of the targeted features were first identified and corrected for each text on each of the five testing occasions. Accuracy on each occasion was calculated as a percentage of correct usage. For example, in any one script, three correct uses of the targeted features from ten obligatory occasions meant a 30% accuracy rate. Inter-rater reliability calculations with a trained research colleague revealed a 95% agreement on the identification of targeted errors and a 98% agreement on the assignment of errors to the targeted categories.

Descriptive statistics for the pre-test and the four post-tests were calculated separately for the four groups. Because no statistically significant differences on the pre-test scores were found, a two-way repeated measures ANOVA was chosen to address the research questions. One way ANOVAs with Tukey's post hoc pair-wise comparisons were used to isolate the exact points in time where differences between the groups occurred.

4. Results

Table 1 below shows the descriptive statistics for the three treatment groups at the four different testing periods. The mean scores refer to the mean percentage accuracy in obligatory occasions.

Fig. 1 provides a visual representation of the mean percentages for the four testing periods for each group. As can be seen, while the three groups were very similar at time one (the pre-test), all groups significantly increased their accuracy after the treatment (post-test 1). Mean scores on the second and third post-test,

Table 1
Descriptive statistics for mean test scores by group and testing period.

| Group | N | Time 1 | | Time 2 | | Time 3 | | Time 4 | |
|----------------------|----|--------|-------|--------|-------|--------|-------|--------|-------|
| | | M | SD | M | SD | M | SD | M | SD |
| 1. CF, written, oral | 13 | 62.46 | 11.98 | 89.23 | 8.22 | 79.61 | 10.29 | 84.31 | 12.33 |
| 2. CF, written | 13 | 55.31 | 20.08 | 83.77 | 10.36 | 78.46 | 11.04 | 81.69 | 10.93 |
| 3. CF | 13 | 59.69 | 20.45 | 79.15 | 14.27 | 79.84 | 13.74 | 78.31 | 13.41 |

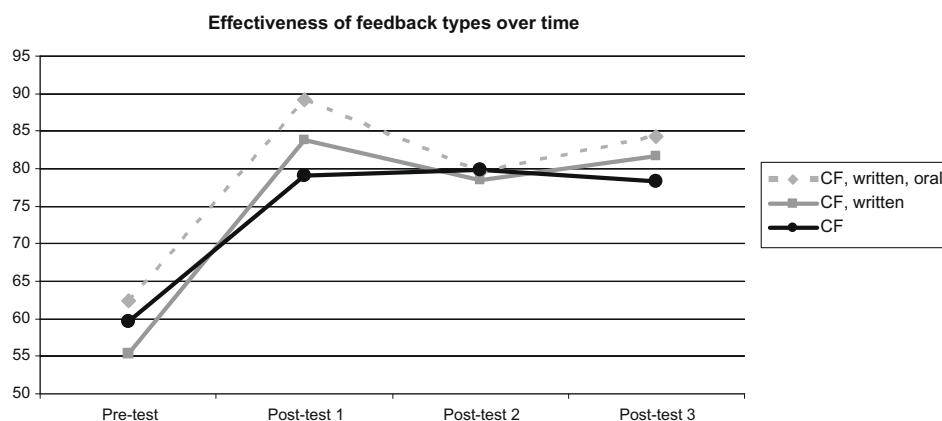


Fig. 1. Mean percentages for the three groups over time.

although slightly lower than on the immediate post-test, show that students were able to retain most of this improvement.

In order to compare the treatment groups' test scores, a series of ANOVAs were computed. Because a one-way ANOVA indicated no statistically significant difference between the three groups, $F(2, 36) = .526$, $p = .595$, a two-way repeated measures ANOVA was chosen to address the research question. In this two-way ANOVA, the test scores were entered as the dependent variable with time/test (four levels) and written corrective feedback type (three levels) as independent variables. Table 2 below shows the results of the analysis.

The two-way repeated measures ANOVA revealed that there was no interaction effect between time and corrective feedback type making the interpretation of main effects easier. There were also no statistically significant differences between the effectiveness of the three different direct written corrective feedback types. The two-way ANOVA did reveal, however, a statistically significant effect for time, with all treatment groups performing statistically significantly weaker on the pre-test ($p < .001$).

5. Discussion

The observable differences in effect for the three different types of written corrective feedback in the three post-tests were not statistically significant. In other words, the simple provision of error correction was just as effective as the additional provision of written and oral meta-linguistic explanation. Similar findings were also reported in Bitchener (2008) and Bitchener and Knoch (2008). Although the latter study found that only two of the three treatment groups outperformed the control group (there was no significant difference between participants who received direct error correction with written meta-linguistic explanation and those who received no feedback), the observed differences between the three treatment groups was found to not be statistically significant. However, differences in effect were evident over time (three and two months, respectively) in two other studies (Bitchener et al., 2005; Sheen, 2007) between groups that received meta-linguistic explanation and those that received direct error correction. In Sheen's study, the difference was evident in the delayed post-test but not in the immediate post-test. The extent to which the students in each study sought additional

Table 2
Two-way ANOVA analysis.

| Source | df | F | p |
|-------------------------|----|-------|-------|
| <i>Between subjects</i> | | | |
| WCF type | 2 | .824 | .447 |
| <i>Within subjects</i> | | | |
| Time | 3 | 46.05 | <.001 |
| Time × WCF type | 6 | .877 | .515 |

input outside the classroom between the post-test periods may have been a cause of difference. Differences in type, amount and delivery of meta-linguistic explanation between the two studies might also explain the improvement reported in Sheen's study.

The fact that no advantage was evident for any of the treatment groups in the present study on any of the four post-test occasions suggests that as long as some form of written corrective feedback is provided, it may facilitate acquisition and accuracy improvement with low proficiency learners. Further research is needed to see if there is an advantage for different types, amount, frequency and delivery of meta-linguistic explanation over a range of testing occasions. Further research is also needed to determine whether or not written meta-linguistic explanation is more beneficial than oral meta-linguistic explanation and whether or not meta-linguistic explanation has an advantage over other types of direct feedback when other linguistic error categories are investigated. It may be the case, as was demonstrated in Bitchener et al. (2005), that system or rule-based features like the use of the article system are more amenable to particular types of direct written corrective feedback like meta-linguistic explanation or error correction alone than item-based features like prepositions for example.

6. Conclusion

The contribution that this study makes to the existing literature is its discovery that direct error correction alone may be as effective as direct error corrective with written meta-linguistic explanation or direct error corrective with both written and spoken meta-linguistic explanation and that the level of increased accuracy in the immediate post-test (clear evidence of the effect of written corrective feedback on improved accuracy) was retained over a two month period. However, further research is required to determine whether the advantage reported by Sheen (2007) for meta-linguistic explanation is retained over a more extensive period of investigation and to determine whether type, frequency, amount and delivery of meta-linguistic explanation is a factor in any difference. Single study investigations of any difference between direct and indirect corrective feedback options are also needed to resolve the conflicting findings of earlier comparative studies. This line of investigation is all the more germane given the positive findings that are now emerging on the long-term efficacy of written corrective feedback in certain contexts. Further research that includes in its design retrospective interviews with participants may reveal the extent to which feedback facilitates the acquisition of partially learned linguistic features through consciousness-raising as opposed to the acquisition of new linguistic knowledge.

Despite these positive findings, some limitations need to be acknowledged. Because of the difficulty in accessing participants over an extensive period of time, the sample size, while acceptable, was smaller than one would have wished for. Secondly, the study was interested in examining the effect of typical written corrective feedback practices in second language classrooms, practices that on some occasions involve only direct error correction, practices that on other occasions add written meta-linguistic explanation and or oral meta-linguistic explanation. Consequently, it is not possible to determine if, in cases where direct error correction together with written and/or oral meta-linguistic explanation are provided, the findings can be attributed to the effect of one or more of the feedback variables. Consequently, studies that separate the feedback variables are now required to determine their relative effect. Nevertheless, the positive findings of the study lead us to suggest that further research be conducted (1) to determine the effect of written corrective feedback on other linguistic domains and (2) to examine the extent to which different types of written corrective feedback might be able to facilitate the acquisition of new linguistic features.

Finally, we believe that a number of pedagogical recommendations can be offered. First, teachers should feel confident about providing direct written corrective feedback on their students' linguistic errors. This is supported by other studies (Bitchener, 2008; Bitchener and Knoch, 2008; Sheen, 2007) that have reported on the short-term effectiveness of written corrective feedback. Secondly, the study has shown that the provision of error correction alone on specific functional uses of rule-based features may be just as effective as combining it with written and oral meta-linguistic explanation. Therefore, in similar contexts, busy teachers should not necessarily feel that they need to go beyond this approach. Thirdly, the importance of student motivation in the learning process is well understood. We believe that this can be achieved if teachers negotiate with their students about which features will be focused on, about how frequently feedback will be given, about the type

of feedback that will be given, and about what learners will be expected to do in response to the feedback. Fourthly, because the study has shown that a single feedback session can be effective in developing accuracy in the use of two rule-based features, we believe that if teachers are able to provide additional feedback on more occasions, it may increase the accuracy rate and reduce the amount of time that is required to achieve a high level of mastery. While recommendations such as these seem appropriate, further research is still required to investigate within a single research design the extent to which different types of direct and indirect written corrective feedback facilitate the acquisition of these and other error categories over time.

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