THE EFFECTIVENESS OF THE THREE COMMON TYPES OF WRITTEN CORRECTIVE FEEDBACK IN IMPROVING GRAMMATICAL ACCURACY

Arlan Parreño

Assumption University
Ramkamheng Road Soi 24, Huamark, Bangkapi
Bangkok 10240, Thailand
E-mail: aparreno@au.edu

Abstract

The study was conducted to determine the effectiveness of written corrective feedback and the differences between the three common types of written corrective feedback on grammatical accuracy among learners of English as a second language in a Thai university context. A pre-test- immediate-post-test-delayed-post-test design was used to compare the effects of direct corrective feedback, indirect corrective feedback, coded corrective feedback, and no correction approach (control group) on accuracy in subject-verb agreement, verb tense, verb form, and word form in a paragraph writing task. Sixty-eight Thai students enrolled in an English foundation course participated in the 15-week experiment. Analyses of data revealed that written corrective feedback had positive revision effects on the four grammar areas. However, only the students who received coded corrective feedback gained significantly in the delayed post-test. In general, grammatical accuracy was significantly influenced by the type of written corrective feedback with the coded corrective feedback group consistently outperforming the other two experimental groups and the control group in both post-tests. Results, therefore, support the role of written corrective feedback, specifically coded corrective feedback, in grammatical accuracy, at least in subject-verb agreement, verb tense, verb form, and word form.

Keywords: correction, corrective feedback, grammar, L2 learning

บทคัดย่อ

การศึกษานี้เพื่อตรวจสอบประสิทธิภาพของการตอบรับการแก้ไขและความแตกต่างระหว่างการเขียนการแก้ไขสามประเภทที่ใช้บ่อย โดยมีการแก้ไขแบบเสนอแนะการแก้ไขแบบความถูกต้องตามหลักไวยากรณ์สำหรับผู้เรียนภาษาอังกฤษเป็นภาษาที่สองในบริบทมหาวิทยาลัยไทย โดยมีการออกแบบการทดสอบก่อนการแก้ไข การทดสอบทันที และการทดสอบภายหลัง ที่ล่าช้าเพื่อเปรียบเทียบผลของการตอบรับการแก้ไขโดยตรงโดยอ้อม โดยการใช้ไขรหัสและไม่มีการแก้ไข(กลุ่มควบคุม) กับความถูกต้องในเรื่องกริยา รูปแบบหลักไวยากรณ์ การใช้กริยากับประธานให้ถูกต้อง แบบฟอร์มคำกริยาและคำในงานเขียนย่อหน้า โดยมีนักศึกษาไทยหกสิบแปดคนที่เรียนหลักสูตรภาษาอังกฤษพื้นฐานเข้าร่วมในการทดลองเป็นเวลา 15 สัปดาห์ การวิเคราะห์ข้อมูลพบว่าข้อเสนอแนะการแก้ไขมีผลในเชิงบวกต่อการแก้ไขไวยากรณ์สี่แบบ เฉพาะนักเรียนที่ได้รับการแก้ไขโดยใช้รหัสเรียนได้ดีกว่าการให้การแก้ไขแบบล่าช้าหลังการทดสอบ โดยทั่วไปความถูกต้องตามหลักไวยากรณ์ได้รับอิทธิพลอย่างมีนัยสำคัญตามชนิดของการแก้ไข โดยกลุ่มการแก้ไขแบบใช้รหัสโดดเด่นกว่า อีกสองกลุ่มคือกลุ่มทดลองและกลุ่มควบคุมทั้งในการทดสอบหลังการทดลอง ผลการวิจัยสนับสนุนการใช้การแก้ไขเขียนแบบใช้รหัส ในความถูกต้องตามหลักไวยากรณ์ อย่างน้อยก็ในเรื่องประธานและกิริยาที่สอดคล้องกัน(subject-verb agreement), , และ กิริยาที่บอกกาลเวลา (verb tense) รูปแบบคำกริยา (verb form)และรูปแบบคำ(word)

คำสำคัญ: การแก้ไข ะการแก้ไขไวยากรณ์ L_2 การเรียนรู้

Introduction

Giving feedback is widely believed as a major part of the teaching profession. Nunan (1998) noted that, together with instructing, giving feedback is considered as one of the most significant responsibilities of teachers. Giving corrective feedback is even considered as a teacher's "traditional right" (Ellis, 2000). Because of such beliefs, teachers are expected to give feedback on whether students' answers or productions are correct or appropriate, or what and how students should improve. It is therefore not surprising to see teachers spending significant amounts of time and effort in performing the task, particularly writing teachers. As pointed out by Ferris (2007), giving written feedback to learners is "the most time consuming and challenging part" (p. 165) of teaching writing.

Leki (1990) observed that one of the most common written feedback given by writing instructors was on language use. She noted that writing instructors were compelled to focus on how ideas were presented or structured in sentences instead of on the ideas because the label "writing

teacher" entailed the expected responsibility of teaching how to write in a particular language.

Language experts theorized that corrective feedback helps in language learning and acquisition as it assists learners notice the difference between their own production and the target structure, raising their consciousness about the structures they are learning (Schmidt & Frota, 1986). Chaudron (1995) and Shin (2008) believed that grammatical corrective feedback is necessary for students to verify the "hypotheses" they have made in structuring their ideas.

Studies have confirmed language teachers' beliefs and practices supporting corrective feedback in terms of grammar as well as mechanics (Schulz, 2001; Montgomery & Baker, 2007; Lee, 2009).

Students as well have a strong belief about the importance of grammar feedback in learning a language and, understandably, have great expectations as well on receiving such feedback (Leki, 1990; Nunan, 1998; Schulz, 2001; Ur, 1998).

Due to these beliefs and expectations, giving written grammar corrective feedback has become a pervasive practice among language teachers (Ferris, 2010). So pervasive that even though teachers suspect its effectiveness, they still continue giving it (Lee, 2009).

Conflicting views and research results about written corrective feedback

However, despite the positive perception of the value of corrective feedback, language academics have not found a consensus on the effectiveness of different kinds of corrective feedback, and even on its usefulness in general (Ellis, 2000, 2009; Ur, 1998). Furthermore, research results have not been helpful in settling these issues (Macaro, 2005; Guenette, 2007).

Since the 80's up to mid-2000, language researchers and experts have offered conflicting findings and theories about the benefits of corrective feedback. For example, Lalande (1982), Schmidt and Frota (1986), Fathman and Whaley (1990), Matsumura et al (2002), Ferris (2006), and Ellis et al. (2006) favored the use of corrective feedback. On the other hand, Semke (1984), Brock et al (1986), Krashen (1987), Leki (1990), and Truscott (1996, 2007) questioned its usefulness.

Common types of written corrective feedback and their effectiveness

The three most common types of written corrective feedback are direct corrective feedback, indirect corrective feedback, and metalinguistic corrective feedback, of which use of codes is the most common approach (Ellis, 2009). However, the question as to which type is the most effective way in dealing with language errors in student compositions has not yet been given a satisfactory answer.

Some research findings have shown the benefits of the direct approach (Ellis et al., 2008; Bitchener & Knoch, 2009; Sheen, 2010). Others, like Fathman and Whaley (1990) and Lee (1997), have favored the indirect method, while there are also others preferring the use of codes, such as Lalande (1982) and Kubota (2001).

However, these three approaches have not yet been put together in an experimental study designed to determine their long-term impacts.

Research questions

Considering the significant amounts of time and effort invested by language teachers in providing corrective feedback on students' compositions, together with all these questions about the role of corrective feedback in second language acquisition, an investigation into the effectiveness of written corrective feedback is therefore imperative.

The following research questions guided the design of the study.

1) Does written corrective feedback improve students' English grammatical accuracy in subject-verb agreement, verb tense, verb form, and word form?

2) Are there significant differences in the effects of the three common types of written corrective feedback, namely direct corrective feedback, indirect corrective feedback, and coded corrective feedback, on students' English grammatical accuracy in subject-verb agreement, verb tense, verb form, and word form?

Methodology

Research Design

To answer the research questions, a pre-test-two-post-tests experimental study was conducted. It involved three experimental groups based on the three types of written corrective feedback treatment, which were direct corrective feedback (DCF), indirect corrective feedback (ICF), and coded corrective feedback (CCF), and a control group that received no written corrective feedback. All groups were given a pre-test (at the beginning of the semester) , an immediate post-test (right after the first treatment was given) and a delayed post-test (at the end of the 15-week semester) to determine the effects of the treatment.

Participants

The study was done at Assumption University in academic semester 1/2011. Four sections of academic English I students were randomly assigned for the study. Originally, there were 112 students divided among the four sections. However, due to exemptions, withdrawals, and student nationality, only 68 Thai students were used for the analyses of data. The four sections were randomly assigned to the four groups.

The average age of the participants was 18.93 years. Of the 68, 40 (57.4%) were females and 28 (41.2%) were males. They were all first year students coming from the faculty of Business Administration (26.5%), Arts (38.2%), and Communication Arts (35.3%). They had an average of 12 years of learning English prior to university. The first language of all study subjects is Thai.

One-way analysis of variance (ANOVA) of the pre-test scores showed that there were no significant differences between the groups in terms of accuracy in the four grammar areas under study: subject-verb agreement ($F(3,64) = 0.619$, $p = 0.605$); verb tense ($F(3,64) = 0.237$, $p = 0.80$); verb form ($F(3, 64) = 0.330$, $p = 0.804$), and word form ($F(3,64) = 0.780$, $p = 0.51$). Thus, it was assumed that all groups were comparable.

Table I. Descriptive statistics for pre-test mean ratings of errors in paragraph

	ICF		DCF		CCF		Control	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
SVA	2.79	2.12	3.26	1.25	3.40	2.19	2.72	1.11
VT	2.07	1.60	2.10	1.66	2.15	1.11	2.45	1.57
VF	1.07	0.71	1.30	0.48	1.24	0.54	1.18	0.91
WF	1.36	0.60	1.40	0.39	1.22	0.43	1.53	0.90

Target language features

The suggestions of Holt (1997) and Lane and Lange (1999) about global and frequent errors and the findings of Bennui (2008), Lush (2002), Pongsiriwet (2001), and Thep-Ackrapong (2005) about the common language problems among Thai students guided the selection of the target structures. Two global errors, i.e errors in verb tense and verb form, and two local errors, i.e. subject-verb agreement and word form, were chosen as they were the most frequent errors committed by Thai students.

Treatment

The direct corrective feedback group received explicit corrections through any of the following ways: a) drawing a line through the error and writing the correct word or words above it; b) crossing out a word or words that make the structure incorrect; c) inserting a letter, a word or words to make a structure correct.

For the indirect corrective feedback group, grammatical errors in students' writings were simply underlined or circled without giving the correction or explaining the error.

The treatment for the coded corrective feedback group involved underlining or circling the errors and identifying the type of errors by using codes, i.e. SVA for incorrect subject-verb agreement, VT for incorrect verb tense, VF for incorrect verb form, and WF for incorrect word form. Also, upon the return of the first practice writing with the treatment, participants in this group received a copy of a correction guide about the use of the codes with explanations as to what they mean with sample errors and corrections. They were allowed to use this guide whenever they revised their practice writings.

The control group received no grammatical corrective feedback, but they received content and organization feedback.

Focused or selective grammar corrective feedback was used, which means only the four target areas were dealt with disregarding other grammar errors.

All groups received general as well as text-specific written feedback on content and organization. Post-writing conferences were also held to discuss common major problems in terms of ideas and language use.

A total of seven treatments were given in the whole study at an interval of approximately two weeks beginning on week 2.

Corrected compositions were returned to students in the class following the practice writing, or in the case of quiz and exam papers, as soon as grading and treatment were finished. Students were asked to go through their writings, and they were encouraged to ask questions regarding the feedback if they had any. Rewriting was also required for practice writings, not for exams. Revised compositions were only impressionistically checked in terms of content and returned to the students in the following meeting.

Tests

As mentioned earlier, a pre-test and two post-tests were administered to all groups. The tests consisted of a descriptive paragraph writing task which was to be completed in approximately 40 minutes. The students were asked to write a paragraph of about 150 words on the topic "The Person I Admire Most". The same topic was given in the pre-test and in the two post-tests to avoid problems in the reliability and validity of the data due to the influence of varying instruments and writing conditions.

Scoring

Three expert raters identified, marked, and tallied the target grammar errors. After all papers were examined, grammatical accuracy scores were calculated. In quantifying grammatical accuracy, the number of errors for every particular grammar area was divided by the number of words in a student composition (Polio, 1997). The score was then normalized by multiplying the result by 100 and was expressed in percent (Biber et al., 1998). For example, (3 SVA errors /150 words) x 100 = 2% or 2 SVA errors per 100 words. Thus, the lower the score, the higher the accuracy.

The ratings of the three teachers in all four grammar areas in all three testing periods were highly and significantly correlated (ranging from 0.90 to 0.953, $p < 0.000$), indicating high inter-rater reliability. Hence, the ratings of the three teachers for each subject in each grammar area in every test were averaged, and these averages were used in the statistical analyses.

Data Analysis

The data were processed and analyzed using SPSS. Exploration of data revealed that there were no extreme values and that the data were normally distributed. For descriptive purposes of the samples and pre- and post-test scores, means, standard deviations, and percentages were obtained. Analysis of variance (ANOVA) was used to determine the comparability of groups at the beginning of the study. To answer the research questions, pre- and post-test data were compared using General Linear Model (GLM) Repeated Measures Test: Two-factor Mixed Design (one between-groups variable – treatment groups, and one within-subjects variable – test scores).

Results

Sample sizes: ICF = 18, DCF = 13, CCF = 20, Control = 17

Subject-verb agreement (SVA)

Table 2 presents the means and standard deviations (SD) of the subject-verb agreement errors made by the four different groups in the three tests. Figure 1 shows the pattern of the changes in the mean scores.

Table 2. Descriptive statistics for subject-verb agreement

	Pre-test		Post-test1		Post-test2	
Group	Mean	SD	Mean	SD	Mean	SD
ICF	2.79	2.12	1.24	1.07	1.83	1.77
DCF	3.26	1.25	1.34	1.02	3.33	1.58
CCF	3.40	2.19	.88	.56	1.59	1.10
Control	2.72	1.11	2.16	1.28	2.49	1.51

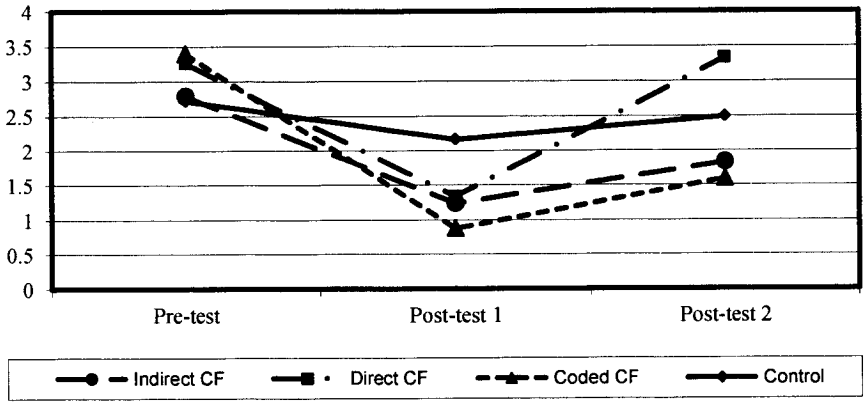

Fig. 1. Means for three testing periods of each group in subject-verb agreement

General Linear Model (GLM) repeated measures tests of within-subjects effects revealed that the differences in the number of SVA errors made across the three tests were significant ($F(2, 128) = 35.40$, $p = 0.000$), with the most number of errors in the pre-test, less in post-test 2, and the least in post-test 1. The time-group interaction was also statistically significant ($F(6, 128) = 4.20$, $p = 0.001$), which suggests that the number of SVA errors committed across the three testing periods depends on the type of the treatment group. Figure 1 illustrates that, although there was a general decrease in the number of SVA errors made in post-test 1 and in post-test 2 compared to the pre-test for all groups, the rate of decrease was greater for the coded CF group than for the other three groups. Tests of within-subjects contrasts for time and group interaction showed significant results for both post-test 1 vs. pre-test ($F(3,64) = 4.489$, $p = 0.006$) and post-test 2 vs. pre-test ($F(3,64) = 4.595$, $p = 0.006$). These contrast results indicate that the mean differences between the pre-test and post-test 1 varied significantly across the four groups, with the coded CF group making the greatest improvement, followed by the direct CF, indirect CF, and control groups respectively. The results also mean that the differences between the pre-test and post-test 2 were significant across the groups, again with the coded CF group making the most improvement, followed by the indirect CF and control groups, while the direct CF group made more errors in post-test 2 than in the pre-test.

Verb tense (VT)

Table 3 shows the results of the three tests among the groups in terms of verb tense accuracy. The patterns are somewhat similar to that of the SVA results.

Table 3. Descriptive statistics for verb tense

	Pre-test		Post-testI		Post-test2	
Group	Mean	SD	Mean	SD	Mean	SD
ICF	2.07	1.60	0.75	0.87	2.01	1.98
DCF	2.10	1.66	0.36	0.47	1.40	0.95
CCF	2.15	1.11	0.53	0.60	.52	0.36
Control	2.45	1.57	1.64	1.23	2.45	1.72

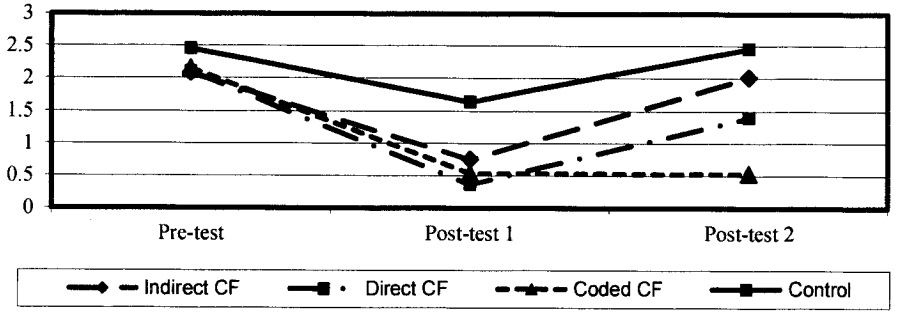

Fig. 2. Means for three testing periods of each group in verb tense

Results of GLM repeated measures tests showed that there were significant differences in the number of verb tense errors across the three tests ($F(2, 128) = 37.40$, $p = 0.000$). The most number of errors was made in the pre-test, whereas the least was in post-test I. Moreover, the interaction between time and group was significant ($F(6, 128) = 3.86$, $p = 0.001$). This indicates that the four groups developed their verb tense accuracy differentially over time. Figure 2 clearly presents the trend in which the three experimental groups outperformed the control group in the immediate post-test. The figure also shows that the coded CF group continued its improvement from pre-test to post-test 2 compared to the other groups. Results of tests within-subjects contrast for time and group interaction revealed that the contrast between the pre-test and post-test I was not significant ($F(3,64) = 1.715$, $p = 0.173$), which indicates that the mean differences between these two tests did not vary across the groups. However,

the contrast for the pre-test vs. post-test 2 was found to be significant ($F(3, 64) = 5.919$, $p = 0.001$). This indicates that the four groups developed differentially in terms of verb tense accuracy from pre-test to delayed post-test, in which the coded CF group made the most improvement followed by the direct CF group, while the indirect CF group had a negligible change and the control group exhibited no improvement at all.

Verb form (VF)

Means and standard deviations for the number of verb form errors made by the four groups in the three testing periods are given in Table 4. All groups made the least number of errors in the immediate post-test and produced the most number of errors in the pre-test, except for the control group that committed the most number of errors in the delayed post-test.

Table 4. Descriptive statistics for verb form

	Pre-test		Post-testI		Post-test2	
Group	Mean	SD	Mean	SD	Mean	SD
ICF	1.07	0.71	0.56	0.53	1.03	0.50
DCF	1.30	0.48	0.34	0.46	1.15	0.68
CCF	1.24	0.54	0.34	0.39	0.47	0.38
Control	1.18	0.91	0.80	0.94	1.65	1.01

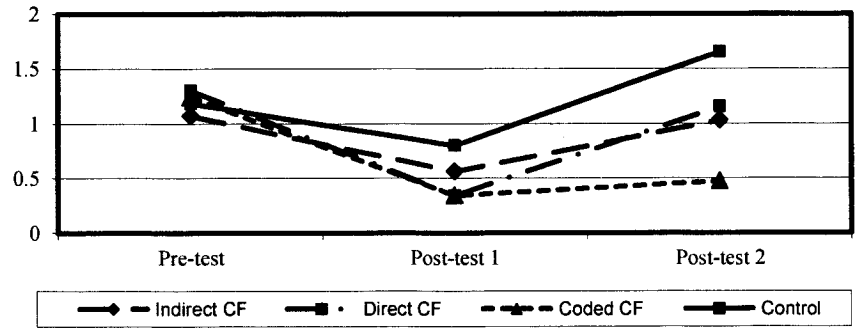

Fig. 3. Means for three testing periods of each group in verb form

In terms of verb form errors, GLM repeated measures tests (using the Huynh-Feldt corrected tests because the assumption of sphericity was not met (Mauchly's Test of Sphericity $p = 0.019$)) showed that the scores of all

four groups differed significantly across the three tests (F (1.923, 123. 074) = 27.032, p = 0.000). The time and group interaction was also found to be significant (F (5.769, 123.074) = 4.206, p = 0.001). This significant interaction indicates that the number of verb form errors made in the three tests depends on the kind of written corrective feedback given to the different groups. Figure 3 shows the pattern in which the experimental groups scored better than the control group from the pre-test to the immediate post-test. However, the mean differences between the pre-test and post-test 1 for time and group interaction were not significant (F (3, 64) = 1.893, p = 0.140), which means that the revision improvement in verb form accuracy did not vary significantly across the groups. The pre-test vs. post-test 2 contrast for time*group interaction was significant (F (3, 64) = 11.127, p = 0.000), which indicates that the rate of improvement from the pre-test to the delayed post-test was not similar across the four groups. As illustrated in Figure 3 the coded CF group outperformed the other two experimental groups, which barely made any improvement, when the pre-test and post-test 2 were contrasted. The control group, on the other hand, produced more errors in the delayed post-test than in the pre-test.

Word form (WF)

Descriptive statistics for word form errors made in the paragraph writing task by the four groups in the three tests are summarized in table 5. The patterns of the results involving errors in word forms are generally similar to that of the other grammar areas under study. Immediate post-test results were lower than the pre-test results, with the indirect CF group showing the most improvement followed by coded CF, direct CF, and control groups respectively. Delayed post-test results were higher than the immediate post-test results, but lower than the pre-test results, with the coded CF group showing greater improvement than the other three groups.

Table 5. Descriptive statistics for word form

	Pre-test		Post-test1		Post-test2	
Group	Mean	SD	Mean	SD	Mean	SD
ICF	1.36	0.60	0.38	0.32	0.91	0.62
DCF	1.40	0.39	0.50	0.51	0.94	0.61
CCF	1.22	0.43	0.30	0.31	0.51	0.60
Control	1.53	0.90	0.91	1.08	1.41	0.65

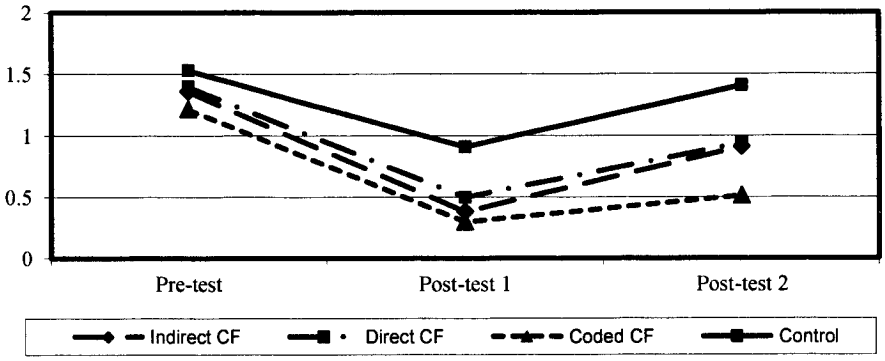

Fig. 4. Means for three testing periods of each group in word form

Tests of within-subjects effects of GLM repeated measures indicated that the differences in the number of word form errors made by all groups across the three tests were significant ($F(2, 128) = 46.638$, $p = 0.000$). Although Figure 4 illustrates that the three experimental groups performed better than the control group from the pre-test to post-tests 1 and 2 , the interaction between time and group was found to be not statistically significant ($F(6, 128) = 1.234$, $p = 0.293$). This means that the number of word form errors committed across the three tests was not dependent on the type of written corrective feedback.

Discussion

The first research question asked whether providing written corrective feedback helped improve the grammatical accuracy of learners of English as a second language. To answer this question, we have to look at the immediate or revision effect and the delayed or long-term effect.

With regard to the immediate effect, results have shown that all three groups that received different kinds of written corrective feedback performed better than the control or no correction group in all grammar areas, i.e. subject-verb agreement, verb tense, verb form, and word form. This result is expected for the direct corrective feedback group since the students simply copied the corrections provided by the teacher. The improvement among students who received indirect corrections can be related to two factors. The first factor is that the students probably had the so-called declarative or explicit knowledge about the four grammar areas which helped them correct

their mistakes when located by the teacher. This suggests that students may be capable of correcting their own mistakes in the editing or revision stage of the writing process as long as they are guided as to where their mistakes are. Another factor that may explain their improved accuracy is that they might have asked knowledgeable others in the classroom, such as the teacher or their classmates, as to why they were wrong and how to correct their mistakes. The increased accuracy among students who received coded corrective feedback indicates that they understood the correction codes with the help of the correction guide which contains the codes, their meaning with sample sentences and corrections. It also suggests that the students possessed declarative knowledge regarding the target structures which helped in implementing the corrective feedback. Students who did not get any written corrective feedback on the four grammar areas also showed some improvement, but at a lower rate than those who received corrective feedback. As this group was also asked to revise their work, they might have made changes in content and organization which in turn might have lessened their use of such grammatical structures. They might have also benefitted from the post-writing conference in which common problems in ideas and language were discussed.

However, when it came to the delayed or long-term effect of written corrective feedback, it can be noted that only the coded corrective feedback consistently worked in all four grammar areas. In subject-verb agreement, coded corrective feedback and indirect corrective feedback groups performed better than the control group, while the direct corrective feedback group performed worse than the control group and even performed worse than in the pre-test. In verb tense, coded corrective feedback and direct corrective feedback groups did better than the indirect corrective feedback group, which made negligible improvement, and than the control group that did not make any improvement. In verb form, the direct and indirect corrective feedback groups made very slight improvement, while the control group performed worse than in the pre-test. Only the coded corrective feedback group showed marked improvement in verb form. In word form, although all groups showed some improvement, the coded corrective feedback group showed the greatest improvement.

Research question 2 asked whether there were significant differences in the effects of the three common types of written corrective feedback on grammatical accuracy. Statistical analyses have shown that there were. Students who received different corrective feedback approaches developed their grammatical accuracy in subject-verb agreement, verb tense, and verb

form differentially across the testing periods, especially in the long term, but not in the area of word form. As discussed above, while all three corrective feedback approaches benefited students in the revision stage, only those who received coded corrective feedback consistently improved their grammatical accuracy in subject-verb agreement, verb tense, and verb form. The superiority of coded corrective feedback over the direct and indirect approaches when it comes to long-term language learning can be attributed to the active mental involvement of students when they are dealing with the codes to correct their written work. Lalande (1982), Jordan (1997), and Broughton et al. (1994) noted that the use of codes engages students in guided learning and problem solving as students analyze their mistakes and do their correction with the help of the codes. The codes do not simply help students in noticing their mistakes, but they also supply some clues as to the kind of mistakes students make, helping students understand the target structure (Sheen, 2010). This understanding is essential in retaining grammatical knowledge for future activation when needed. According to Storch and Wigglesworth (2010), using codes makes students more engaged in their language tasks which then leads to increased uptake in revision. This high uptake results in better comprehension that benefits students in the long-term because of higher retention. The same cannot be said of the direct and indirect corrective feedback. The direct approach obviously does not engage students in active cognition as students simply follow what teachers supply them. Students may notice the difference between their own construction and the proper way of writing or saying it, but they may not be able to understand why it is so or they may simply forget later on. Indirect approach may involve students in problem solving, but without guidance or explanations, they may not be able to fully understand certain language structures. Asking knowledgeable others may not always be an option or available to all students since they may be shy to ask or those they want to ask may be busy too. Limited understanding of mistakes may lead to limited retention or worse, retention of incorrect information.

There should be one important thing to note here. As observed, only subject-verb agreement, verb tense, and verb form were significantly influenced by written corrective feedback. Although the corrective feedback groups, especially the coded group, outperformed the control group in word form accuracy, results have shown that the improvement did not depend on the treatment and may be linked to practice effect. This finding can be explained by what Ferris (2006) called treatable and untreatable errors. Treatable errors are those that are rule-based and thus can be corrected by

following the rules. Untreatable errors, on the other hand, are those that are not governed by rules, but rather by convention or vocabulary, which can be acquired through practice. Subject-verb agreement, verb tense, and verb form are all considered treatable as there are grammar rules that govern their proper usage, while word form is considered as untreatable because it is based on vocabulary knowledge. Even if students know that they have to use a noun, verb, adjective, or adverb in a certain structure but they are not familiar with the different forms of a particular word, they will not be able to write the appropriate word. This finding suggests that written corrective feedback, i.e. coded corrective feedback, can impact only treatable errors.

Conclusions

The investigation was conducted to help answer some lingering questions about the role of written corrective feedback in developing the language accuracy of learners of English as a second language. This study has provided evidence that a common type of corrective feedback improves grammatical accuracy in the areas of subject-verb agreement, verb tense, and verb form. That type is the coded corrective feedback, which involves underlining the mistakes and giving clues as to the kind of mistakes by using codes or signs. The results of this investigation have shown that using codes in dealing with grammar errors is more effective than simply locating the mistakes (indirect approach) or supplying the corrections (direct approach) as it involves active mental participation of students in correcting their mistakes, which is essential in learning a language. The use of codes does not simply help students notice the gap between their own production and the correct way of using a particular language structure, but more importantly, it affords students better engagement with and understanding of target language structures, both of which are vital in retaining knowledge for future use.

However, it should be noted that coded corrective feedback in this study seems to have worked in the following context. First, the students involved were of low intermediate to intermediate levels of English proficiency. Second, writing paragraphs was one of the main foci of the course. Third, the corrective feedback was focused on selected grammatical structures. Fourth, only rule-based structures or treatable errors were influenced by coded corrective feedback. Fifth, students were given a correction guide that clearly explains the meaning of the codes, with sample mistakes and corrections. Finally, rewriting of compositions with corrective feedback was a

part of the process. It is therefore safe to suggest that in order to reap the benefits of coded written corrective feedback, all six factors should be carefully considered.

Finally, as this study has limitations, further research should be focused on the following questions.

- Are there significant differences in the effects of different types of written corrective feedback on grammatical accuracy in other contexts such as different English courses, different student proficiency levels, longer writing tasks, other errors, unfocused correction, and no rewriting tasks?

- Is coded corrective feedback effective in the contexts mentioned above?

Answers to these and other relevant questions will aid in better understanding about the role of written corrective feedback in second language learning.

References

Bennui, P. 2008. A study of LI interference in the writing of Thai EFL students. *Malaysian Journal of ELT Research, 4,* 72-102.

Biber, D., Conrad, S. & Reppen, R. 1998. *Corpus Linguistics: Investigating language use structure and use* (Cambridge: Cambridge University Press).

Bitchener, J. & Knoch, U. 2009. The contribution of written corrective feedback to language development: A ten-month investigation. *Applied Linguistics, 31 (2),* 193-214.

Brock, C., Crookes, G., Day, R. & Long, M. 1986. Differential effects of corrective feedback in native-speaker-nonnative speaker conversation. In R. Day (ed.) *Talking to learn: Conversation in Second Language Acquisition* (pp. 229-236) (Massachusetts: Newbury House Publishers, Inc.).

Broughton, G., Brumfit C., Flavell, R., Hill, P., & Pincas, A. 1994. *Teaching English as a Foreign Language* (New York: Routledge, 2nd edn.).

Chaudron, C. 1995. *Second Language Classrooms: Research on teaching and learning* (Cambridge: Cambridge University Press.)

Ellis, R. 2000. *Instructed Second Language Acquisition: Learning in the classroom* (Oxford: Basil Blackwell).

Ellis, R. 2009. A typology of written corrective feedback types. *ELT Journal, 63 (2),* 97-107.

Ellis, R., Loewen, S. & Erlam, R. 2006. Implicit and explicit corrective feedback and the acquisition of second language grammar. *Studies in Second Language Acquisition, 28,* 339-368.

Ellis, R., Sheen, Y., Murakami, M. & Takashima, H. 2008. The effects of focused and unfocused written corrective feedback in an English as a foreign language context. *System, 36 (3),* 353-371.

Fathman, A. K. & Whalley, E. 1990. Teacher response to student writing: Focus on form versus content. In B. Kroll (Ed.) *Second Language Writing: Insights for the classroom* (pp. 178-190) (Cambridge: Cambridge University Press).

Ferris, D. 2006. Does error feedback help student writers? New evidence on the short- and long-term effects of written error correction. In K. Hyland and F. Hyland (Eds.) *Feedback in second Language Writing: Contexts and issues* (pp. 81-104) (Cambridge: Cambridge University Press).

Ferris, D. 2007. Preparing teachers to respond to student writing. *Journal of Second Language Writing, 16 (3),* 165-193.

Ferris, D. 2010. Second language writing research and written corrective feedback in Second Language acquisition: Intersections and practical applications. *Studies in Second Language Acquisition, 32,* 181-201.

Guenette, D. 2007. Is feedback pedagogically correct? Research design issues in studies of feedback on writing. *Journal of Second Language Writing, 16 (1),* 40-53.

Holt, S. 1997. Responding to grammar errors. *New Directions for Teaching and Learning, 70,* 69-76.

Jordan, R. R. 1997. *English for Academic Purposes: A guide and resource book for teachers* (Cambridge: Cambridge University Press).

Kubota, M. 2001. Error correction strategies used by learners of Japanese when revising a writing task. *System, 29 (4),* 467-480.

Krashen, S. 1987. *Principles and Practice in Second Language Acquisition* (London: Prentice Hall).

Lalande, J.F. 1982. Reducing composition errors: an experiment. *Modern Language Journal, 66,* 140-149.

Lane, J. & Lange, E. 1999. *Writing clearly: An editing guide* (Boston: Heinle & Heinle).

Lee, I. 1997. ESL learners' performance in error correction in writing: Some implications for teaching. *System: International Journal of Educational Technology & Applied Linguistics, 25 (4),* 465-477.

Lee, I. 2009. Ten mismatches between teachers' beliefs and written feedback practice. *ELT Journal, 63 (1),* 13-22.

Leki, I. 1990. Coaching from the margins: Issues in written response. In B. Kroll (ed.) *Second Language Writing: Insights for the classroom* (pp. 57-68) (Cambridge: Cambridge University Press).

Lush, B. 2002. Writing errors: A study of Thai students' writing errors. *Thai TESOL Bulletin, 15 (1),* 75-82.

Macaro, E. 2005. *Teaching and Learning a Second Language: a guide to recent research and its application* (London: Continuum).

Matsumura, L.C., Patthey-Chavez, G.G., Valdes, R. & Garnier, H. 2002. Teacher feedback, writing assignment quality, and third grade students' revision in lower- and higher-achieving urban schools. *The Elementary School Journal, 103 (1),* 3-25.

Montgomery, J. & Baker, W. 2007. Teacher-written feedback: Student perceptions, teacher self-assessment, and actual teacher performance. *Journal of Second Language Writing, 16 (2),* 82-99.

Nunan, D. 1998. *Language Teaching Methodology: A textbook for teachers* (London: Prentice Hall).

Polio, C.G. 1997. Measures of linguistic accuracy in second language writing research. *Language Learning, 47 (1),* 101-143.

Pongsiriwet, C. 2001. Relationships among grammatical accuracy, discourse features, and the quality of second language writing: The case of Thai EFL learners. Ed.D. Dissertation, West Virginia University, United States -- West Virginia. Retrieved October 10, 2010, from Dissertations & Theses: A&I. (Publication No. AAT 3022059).

Schmidt, R.W. & Frota, S.N. 1986. Developing basic conversational ability in a second language: A case study of an adult learner of Portuguese. In R. Day (Ed.) *Talking to learn: Conversation in Second Language*

Acquisition (pp.237-326) (Massachusetts: Newbury House Publishers, Inc.).

Schulz, R.A. 2001. Cultural differences in student and teacher perceptions concerning the role of grammar instruction and corrective feedback: USA-Colombia. *The Modern Language Journal, 85 (2),* 244-258.

Semke, H.D. 1984. Effects of the red pen. *Foreign Language Annals, 17,* 195-202.

Sheen, Y. 2010. The role of oral and written corrective feedback in second language acquisition. *Studies in second Language Acquisition, 32,* 169-179.

Shin, S.K. 2008. Fire your proofreader! Grammar correction in the writing classroom. *ELT Journal, 62 (4),* 358-365.

Thep-Ackrapong, T. 2005. Teaching English in Thailand: An Uphill Battle. *Manutsart Paritat: Journal of Humanities (Srinakarinwirote University), 27 (1),* 51-62.

Truscott, J. 1996. The case against grammar correction in L2 writing classes. *Language Learning, 46 (2),* 327-369.

Truscott, J. 2007. The effect of error correction on learners' ability to write accurately. *Journal of Second Language Writing, 16 (4),* 255-272.

Ur, P. 1998. *A Course in Language Teaching: Practice & Theory* (Cambridge: Cambridge University Press).

Storch, N. & Wigglesworth, G. 2010. Learners' processing, uptake, and retention of corrective feedback on writing. *Studies in Second Language Acquisition,* 32 (02), 303-334.