

THE EFFECT OF TEACHERS' ERROR FEEDBACK ON INTERNATIONAL
STUDENTS' SELF-CORRECTION ABILITY

by

Youngju Hong

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GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Youngju Hong

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

July 26, 2004
Date

C. Ray Graham
C. Ray Graham, Chair

4-20-2004
Date

William G. Eggington
William G. Eggington

July 22, 2004
Date

Mark W. Tanner
Mark W. Tanner

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduation committee, I have read the thesis of Youngju Hong in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

July 26, 2004
Date

C. Ray Graham
C. Ray Graham
Chair, Graduate Committee

Accepted for the Department

Alan D. Manning
Alan D. Manning
Graduate Coordinator

Accepted for the College

Van C. Gessel
Van C. Gessel
Dean, College of Humanities

ABSTRACT

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Youngju Hong

Department of Linguistics and English Language

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The purpose of this study is to examine the effect of teachers' error feedback on ESL students' self-correction ability. One hundred and nineteen international students enrolled in ESL composition classes at Brigham Young University's English Language Center participated in this research. The participants were randomly assigned to three treatment groups: (1) a coded feedback group, (2) a non-coded feedback group, and (3) a no-feedback control group. All participants were asked to write an in-class essay and to self-correct their grammatical errors during 20-minute time period. A grammar test and attitudinal survey were administered at the same time.

The results of an ANCOVA indicated that teacher feedback was the most significant factor influencing students' self-correction, compared to proficiency level and performance on the grammar test. There was a significant difference between the control

group that did not receive any feedback from teachers and the two experimental groups that were given either coded or non-coded feedback ($p < .01$). However, there was no significant difference in performance on self-correction between the coded feedback group and the non-coded feedback group. In addition, survey results revealed that students preferred receiving coded feedback over other feedback methods.

The results of this study support the claim that error feedback helps ESL learners self-correct grammatical errors. In addition, the attitudinal survey shows that, overwhelmingly, students prefer coded feedback.

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Chapter One

Introduction

Throughout the history of teaching writing to second language (L2) learners, there has been a constant dispute among scholars and teachers regarding the role of error feedback in helping students learn how to write (Fathman and Whalley, 1990; Ferris, 1999a; Lalande, 1982; Semke, 1984; Truscott, 1996). Although many studies have been conducted to examine this issue, a lot of confusion remains regarding what kind of error correction helps which learners to improve which parts of the writing process.

As a result of this controversy, many English as a Second/ Foreign Language (ESL/EFL) writing teachers are often confused about how to help their students. Some teachers still have a tendency to provide explicit and elaborate grammatical corrections to students' compositions. However, there is a serious question as to the usefulness of this kind of direct feedback treatment. Error feedback may not help students improve their accuracy when composing regardless of the teachers' time and effort (Semke, 1984; Zamel, 1985). For example, many students make the same errors over and over even though they receive feedback from their teacher. For this reason, some researchers have expressed skepticism about the effectiveness of error feedback offered in classroom instruction (Semke, 1984; Truscott, 1996). However, ESL students whose interlanguage is still developing probably need and expect grammar feedback on errors from their teachers as a part of the process of improving their writing (Ferris, 2002; Leki, 1991).

In this situation, writing teachers should realize that ESL writing is one of the most complicated aspects of becoming proficient in a second language. Consequently,

there are many variables that affect the effectiveness of feedback on writing. Hence, teachers should consider several aspects of error feedback when implementing error correction in writing classes: Who are the learners? When in the writing process should feedback be offered? What types of errors should be dealt with? How much information should be provided? Over what period of time should feedback be given? There is no single feedback method that is effective for all types of learners in all contexts. Therefore, in order to better understand the nature of second language writing, it is important to recognize what kind of problem areas in error feedback exist in ESL writing.

First, teachers need to know who the learners are. Depending on whether learners are adults or children, the effects of error feedback on writing might be greatly different. In general, adult learners who are more conscious about form can make better use of error feedback than children. Also, it is important to know whether students are basically “eye-based” language learners (Reid, 1998a, p. 6) such as international students and EFL students or “ear-based” learners (Reid, 1998a, p. 4), that is, students who have developed their language skills primarily through oral interaction in a second language context. Reid explains that “eye learners” who have less exposure to the target language environment might rely more on formal instruction or teachers’ intervention than “ear learners” in order to compensate for their lack of intuition in the target language. Therefore, error feedback might benefit eye learners more than ear learners.

Second, researchers and teachers need to clearly identify during what part of the writing process they offer feedback. The writing process consists of planning, composing, revising, and editing. It is hard, in a short period of time, for students to learn how to use correct forms in composing simply by attending to error feedback (Truscott, 1996).

However, teachers can at least help students revise their draft and edit their own errors by providing appropriate feedback. Therefore, error feedback seems to have more effect on revising and editing than on composing. For this reason, regardless of constant arguments among scholars about the impact of error feedback on the accuracy of ESL students' writing, positive results were reported by studies examining the effects of grammar feedback on students' editing or correction process (Fatherman et al., 1990; and Ferris and Roberts, 2001; Franzten and Rissell, 1987; Makino, 1993). Self-editing means that students find their grammatical errors and correct them, whereas self-correction indicates fixing those errors identified by teachers. That is, self-correction is a part of self-editing. Ferris et al. (2001) found that students who were given error feedback from the teacher had greater self-correction abilities than those who were not given error feedback. Self-correction benefits the students because their consciousness is raised by critically thinking and correcting their own errors, and the task is more learner-centered.

Third, teachers need to understand what types of errors they will deal with. They offer feedback on errors regarding sentence-level grammar, rhetorical organization, and content. When feedback is given, correction of sentence-level grammatical errors seems to be less effective than correction of rhetorical organization and content (Zamel, 1985). For example, suppose students do not know how to organize their texts because they are not familiar with the rhetorical organization of English. Teachers can guide them through the process of writing a topic sentence, supporting their ideas, and restating the topic. In this case, ESL students will reflect the teachers' feedback in the revision process. This knowledge is more likely to transfer to later compositions. Also, feedback on content has more of an effect than correction of sentence-level grammar because content feedback

from teachers as readers plays an important role as students try to improve their content. However, it takes a great deal of time and practice for learners to incorporate forms from teacher's input into their interlanguage and to produce the correct forms in their composing.

Fourth, when giving grammar feedback, teachers should consider how much information they need to provide. Many teachers can correct errors directly by providing corrections to all errors; however, this method may not be justified in terms of the time and effort required. Therefore, more teachers favor indirect feedback for pedagogical reasons-- it gives students the opportunity to identify and correct their own errors (Ferris, 2002; Hendrickson, 1984; Robb, Ross, & Shortreed, 1986). Raimes (1983) advised that writing teachers provide students with the time and opportunity to correct errors themselves before the teacher reviews them. Students' proficiency level is another factor that determines the effectiveness of different types of feedback. More proficient students are able to use less explicit feedback better than beginning students (Hendrickson, 1984; Rapp, 1988).

Finally, the period of time over which feedback is given appears to affect its effectiveness. It takes time for ESL students to acquire correct forms. Therefore, it is not surprising that students' accuracy in composing does not dramatically improve in a short period of time.

In short, a variety of factors exist that influence the effect of feedback on writing, and yet there is still little consensus about these issues in the field of writing pedagogy. However, careful consideration of the nature of writing feedback may make it possible to understand the bigger picture of the effect of feedback on writing.

As a part of that effort, this study will examine the relationship of students' self-correction to different types of teachers' feedback-- coded versus non-coded feedback. As previously mentioned, error feedback seems to be more beneficial to adult international students when it is implemented systematically and consistently. Therefore, this experimental study will closely investigate the effects of grammar feedback on the editing process of writing with adult learners who are college-level international students. An editing process consists of identifying and correcting errors. In this study, only a correction process will be examined. With regard to the type of feedback, the effect of different kinds of feedback (coded versus non-coded feedback) in students' self-correction will be examined.

The findings from this research will have important implications for both EFL and ESL writing teachers. If providing coded feedback, which requires more time and effort on the teacher's part, is no more beneficial than providing non-coded feedback, which requires less time and effort, then it is a waste of teacher's time to continue to provide such feedback when they could be using their time in more beneficial ways.

Research Questions

One purpose of this study is to find out the most significant factors influencing international ESL students' self-correction ability. The major issue that will be examined is whether teacher error feedback helps international ESL students self-correct their grammatical errors in writing. It will also investigate whether these students can make better use of more explicit feedback when self-correcting their grammatical errors in writing. Finally, the students' preferences toward error feedback methods will be surveyed.

Chapter Two

Review of Literature

The purpose of this study is to examine the effect of teacher error feedback and the influence of the level of explicitness of indirect grammar feedback on international students' self-correction ability. The review of literature will discuss the different perspectives about error feedback throughout the history of teaching writing. Self-editing and self-correction strategies in writing classes will also be reviewed, followed by a review of different types of feedback on grammar: direct versus indirect feedback and coded-feedback versus non-coded feedback. Finally, literature regarding students' attitudes toward grammar feedback will be presented.

Perspectives on Error Feedback

Theories about teaching English as a second language have affected perspectives regarding feedback on writing over the past several decades. Raimes (1991) summarized the shift in the teaching of writing according to second language acquisition theory. Until the 1970s, language teachers put great emphasis on accuracy and attached greater importance to form rather than meaning. During this period, when behaviorism and structuralism predominated in the language learning field, writing was regarded as a tool to practice grammatical structures. Accurate forms of language were given the highest priority in writing classes. In this framework, writing was mainly taught through controlled writing exercises and students had few opportunities to express their opinions in written English. With regard to errors, most writing teachers spent a lot of time treating students' errors and they usually provided the correct forms directly.

Since the 1970s, the major teaching theory has been Communicative Language Teaching (CLT), which has emphasized the communicative function of a language. In this framework, writing teachers have attempted to help their students gain fluency in writing. Free writing was a popular technique used frequently in the classroom.

Since then, some first language (L1) teachers and scholars have taken an interest in the writing process, rather than the product itself (Faigley & Witte, 1981; Sommers, 1980). Being influenced by L1 research, many L2 researchers have applied the process approach to L2 writing (Keh, 1990; Raimes, 1984; Semke, 1984; Zamel, 1980, 1985). Zamel (1980) suggested that the purpose of composing should be to help students express their feelings, experiences, and opinions. This approach emphasizes the ongoing steps of student writing from prewriting to post-writing such as brainstorming, planning, drafting, rewriting, and editing (Keh, 1990). The act of writing is considered to be a matter of communication between a reader and a writer, and is not restricted to grammar practice.

Feedback in the process approach emphasizes a reader's (a teacher or peer's) response regarding the content and organization and leaves grammatical accuracy to the final editing phase. Therefore, advocates of the process approach have often argued that overt error correction may hinder the development of fluent writing (Semke, 1984; Zamel, 1985). Zamel (1985) examined whether error correction was effective in improving grammatical accuracy in compositions by comparing students who had been given correction on grammar with those who had been provided with feedback on only content. She reported that no significant difference was found in accuracy of composing between the two groups throughout the experimental period. In the aspect of content, however,

students who were given content feedback only were superior to those who were given grammar feedback only.

Semke (1984), who utilized a process approach, suggested that teachers be concerned more about content since error correction did not help L2 German students improve their accuracy. She found that error correction did not make a difference in the accuracy of her L2 students' compositions. Semke formed four groups for the study: the first group was given comments on grammatical errors; the second group was provided comments on content; the third group was provided comments on both grammar and content; and the fourth group had errors pointed out without correcting them. She reported that there was no significant difference in accuracy of the students' compositions among the four groups after the 10-week experimental period.

Findings from the studies of Semke (1984) and Zamel (1985) gave L2 writing teachers considerable insights about the need to be more concerned with content than with surface forms by recognizing the communicative aspect of writing. However, the finding regarding the effects of feedback on improvements in surface level grammar usage in composing must be interpreted cautiously. In the study by Semke (1984), for example, a 10-week experimental period may not have been long enough to observe the effects of feedback on students' interlanguage. Therefore, even though the students did not show significant improvement in the post-test, this study could not guarantee that error correction had no benefit for the students in terms of long-term development.

Regarding the need for error feedback, Truscott (1996) strongly argued that grammar correction should be abandoned because it is ineffective and even harmful for students. He commented that many writing teachers have a tendency to assume that error

correction helped students improve grammatical accuracy, but there was no empirical evidence about this speculation from long-term studies. He suggested that accuracy of writing could be appropriately measured only by a longitudinal research design, not by short-term experimental design.

As Truscott (1996) stated, many of the L2 writing studies exploring the impact of error correction on students' compositions investigated the effectiveness of grammar feedback over a short period of time. This limited time period might be one factor causing the negative results. It is not surprising that students' accuracy did not improve dramatically in a short period of time. Since research in interlanguage development has shown that the acquisition of certain forms takes a relatively long time. Therefore, it is predictable that there was no significant difference in the students' written work when comparing the results before and after the grammar feedback treatment was given in the short-term experimental design.

In a study of 72 ESL students, Fathman et al. (1990) found that students can write better compositions just by rewriting their drafts regardless of feedback. They formed four groups based on the following feedback conditions: a no feedback group as a control group, a grammar feedback group, a content feedback group, and a grammar & content feedback group. The revisions made by the students in the grammar feedback group produced a statistically significant difference in the number of errors included in compositions. On the other hand, those participants who received only content feedback could not correct most of the errors by themselves, even though their content had improved. The most important finding of this study was that all the students from the different feedback groups did rewrite better drafts in terms of content regardless of the

feedback on content. However, successful correction of grammatical errors was accomplished only when grammar feedback was provided. Therefore, these results indicate that students might have trouble correcting grammatical errors in revision without the teacher's help. Furthermore, it explains, in part, why many studies (Semke 1984, Zamel, 1985) comparing the effectiveness of form-based and content-based feedback showed the superiority of content-based feedback.

It is important to note that focus on form in writing does not assume negligence of content or fluent writing. Recently, Chandler (2003) reported a long-term effect of grammar feedback in writing. Her students improved accuracy in writing without changing fluency over one academic semester. Thus, teachers should realize the need to help and encourage students to pay more attention to accurate forms in order to communicate effectively. Students frequently have a hard time expressing exactly what they think due to the lack of linguistic knowledge. Ferris (1995c) stated:

Though students may be much better at invention, organization, and revision than they were before, too many written products are still riddled with grammatical and lexical inaccuracies. No matter how interesting or original a student's ideas are, an excess of sentence- and discourse-level errors may distract and frustrate instructors and other readers (p. 18).

Emphasizing attention on the form of language, Eskey (1983) stated: "The achievement of some level of communicative competence does not automatically entail the achievement of an equal grammatical competence" (p. 319). He also mentioned that the development of fluency does not guarantee that of accuracy because L2 learning differs from LI acquisition. According to Skehan (1996), ESL students can succeed in

catching meaning if they appropriately use communicative strategies that assist comprehension of meaning. However, repeated overuse of these kinds of communicative strategies might lower students' motivation to learn correct form because they achieve their communicative goals without explicit attention to form. In the long run, it might prevent their interlanguage system from developing and cause fossilization of errors.

In addition, other researchers also recognize that L1 and L2 writing instruction should be different, since L2 learners, who are non-native speakers, are still in the process of developing interlanguage, and frequently make grammatical errors (Butler, 1980; Leki, 1990). Butler (1980) pointed out that L2 learners who had been exposed to less English grammar and rhetoric structure had more trouble correcting their own errors than did L1 learners when they were asked to read their writing aloud without a teacher's intervention.

As Leki (1990) points out, compared with L1 learners, L2 students confront more difficulty in writing classes. They have to learn how to write well in terms of organization and content while struggling with their linguistic limitation such as a lack of knowledge about vocabulary and grammar. They also experience difficulty in using language appropriately in context. That is, it is hard to learn appropriate language use even though the students already know the grammatically correct forms. Therefore, many researchers have begun to reexamine the role and effectiveness of error feedback in the writing class.

Currently, many scholars take a more eclectic position of looking at form versus meaning, while not overemphasizing either. Therefore, a balanced approach that focuses on both form and meaning is supported by more writing teachers. This concept is also

applied to feedback. Even though some researchers insist that content feedback is more worthwhile than grammar feedback, students may need a combination of both types of feedback to compose better. As a result, those who treat form lightly may need to recognize that form itself cannot be acquired automatically without a teacher's input or instruction, whether explicit or implicit (Larsen-Freeman, 1991).

According to "the variables that determine the importance of grammar" identified by Celce-Murcia (1985), the degree of importance of the form is different depending on learner variables such as age, proficiency level, educational backgrounds, as well as instructional variables including skill, register, and need or use. That is, a focus on form is considered more important for students who are adults and at an advanced level, literate and well educated. As for instructional variables more attention on form is required in writing than speaking, in formal registers, and for professional needs or uses. Therefore, ESL teachers who teach writing to college-based adult students need to recognize students' need for accuracy. They should help their students use correct forms either by error feedback or by a short grammar mini-lesson as Ferris (2002) suggested. Thus, error feedback might be one possible solution for helping students.

Many researchers have reported that there is a crucial relationship between the teacher's feedback and improvement of students' writing ability. Kroll (2001) suggested that error correction might play an important role if the teacher understands when and how they correct errors and what kind of errors they should correct. Lalande (1982) examined the effects of error correction procedures with students learning German as a foreign language in the United States. He gave two kinds of error correction: one was to provide direct error correction marking the location of errors in a sentence (the control

group), and the other was to use an error analysis table indicating frequent error types (the experimental group). At the post-test which was conducted at the end of the semester, the experimental group students made less grammatical and lexical errors in their compositions than the students from the control group. Based on this finding, Lalande discussed that the combination of error awareness and problem-solving techniques significantly benefited the students. That is, error correction is most effective when L2 students are provided with an opportunity to correct their errors by themselves after teacher feedback is given.

Although some scholars hold negative views regarding the effectiveness of grammar feedback, most researchers have reported that feedback on errors can help students improve grammatical accuracy in composing and editing (Chandler, 2003; Ferris, 1995c; Frantzen, 1995; Hendrickson, 1984). L2 learners often fail to precisely convey what they think because it is difficult to express it in written English with a limited lexical and grammatical knowledge. Therefore, L2 writing teachers need to meet students' needs by offering them appropriate feedback. Particularly, error correction is likely to be more beneficial to EFL and international students who learned English only in a formal setting. Because these students usually depend on the teacher's feedback as their main source of input, teachers may need to address error correction in order to help these students.

Self-editing Strategy

Ferris (1995c) mentioned: "Because I will not always be there to help my students, it is important that they learn to edit their own work successfully" (p. 8). She also suggested that the goal of ESL writing teachers is to have their students become "skillful

independent editors” (p. 18). Considering time constraints, it is hard for teachers to supply error feedback to all students’ drafts within the writing process. Therefore, L2 teachers should establish alternative strategies to reduce their efforts and have their students become more independent learners. One potential strategy is self-editing.

Basically, self-editing refers to a technique that allows students to identify and correct their own errors by reviewing them. On the other hand, self-correction indicate that students correct their grammatical errors marked by teachers. It means that self-correction is a part of a whole editing process. In the literature, however, there have been only a few studies examining the editing process of writing (Hall, 1991). Also, most of the previous literature did not distinguish the difference between editing and correction (Ferris et al., 2001; Makino, 1993). To this point, there has been no empirical evidence reported about which is more beneficial in improving students’ accuracy. Therefore, further research should clarify this distinction.

Self-editing or self-correction plays a particularly important role in the revision process because it demands that students pay explicit attention to form. It may also enable students to have more autonomy in learning, requiring that they take responsibility in the process of monitoring their own errors. As a result, self-editing or self-correction has been advocated by many L2 writing researchers (Bosher, 1990; Ferris, 1995c; Hendrickson, 1984; Lalande, 1982; Makino, 1993; Watkins-Goffman, 1989).

Makino (1993) investigated how detailed a teacher’s feedback on grammatical errors should be. He compared the ratio of correct answers from three self-editing sessions: when no feedback was provided; when sentences containing grammatical errors were marked; and when the exact location of errors in a sentence was underlined. In all

three cases, no further explanation about errors was offered. The results showed that students could correct their errors more successfully in the self-editing exercise when they were given more detailed feedback through underlining errors. Based on the results, he discussed two pedagogical implications regarding self-editing. First, students' awareness of form may increase when they reflect on their own composition. Second, it may activate students' linguistic competence since they try to use their existing knowledge about the L2 when correcting grammatical errors.

Another study investigated the different effects of teacher's feedback on rewriting depending on the types of errors learners had: grammar or content. According to Fathman et al. (1990), grammatical errors were not automatically corrected in revision without a teacher's intervention. On the other hand, the content of students' compositions could be improved more in revision even if teachers did not provide feedback. With regard to these findings, they determined that rewriting itself can improve students' compositions in terms of content. However, students needed a teachers' feedback to correct their grammatical errors.

In a study of 40 ESL students at Brigham Young University, Hall (1991) qualitatively analyzed whether a self-discovery form of error feedback helped students' formal editing skills to improve. Even though their composing accuracy did not change significantly during the experiment, he found that students' editing skills were improved by the feedback. Yet, he did not find that successful editing of grammatical errors had transferred to long-term development of accuracy.

Recently, however, Chandler (2003) reported that having ESL students self-correct their errors improved their accuracy in writing over time. This researcher

examined the long-term effect of self-correction with 16 undergraduate students from East Asian countries who were attending the New England Conservatory of Music. The experimental group students were asked to correct their grammatical errors which were underlined by the researcher before they turned in a subsequent draft while the students from the control group corrected their errors at the end of the semester. By doing this, she examined the effect of students' self-correction after receiving teachers' feedback on grammatical errors. At the end of the semester, grammatical accuracy of the experimental group students was significantly improved both in revision and subsequent compositions without declining fluency. This is an interesting finding because it confirms that self-correction is helpful for improving long-term accuracy in writing.

Both self-editing and self-correction are useful techniques that can be employed in writing classes as the previous studies done by Chandler (2003) and Makino (1993) indicated. However, there have not been many studies in this area even though many issues remain to be addressed. For example, can self-editing ability contribute in the development of grammatical accuracy? What kind of training is necessary for students to learn how to edit their own errors efficiently and effectively? Further research is needed to investigate these issues.

Types of Feedback: Direct versus Indirect Feedback

Long (1977) identified the difference between error correction and feedback. The purpose of error feedback is to help students detect grammatical errors and correct them (cited in Makino, 1993). In this context, direct feedback is more closely related to error correction than error feedback. Ellis (1985) also noted that this direct method is just low-level correction and not real feedback. According to Hendrickson (1984), the purpose of

indirect feedback is to indicate either the presence or the specific location of errors; direct feedback means not only to indicate the presence or location of errors, but also to suggest correct forms. If the students are only provided with direct feedback on their final drafts, they do not have an opportunity to reflect and correct the errors for themselves; they only note the errors marked by the teacher. This is one reason why indirect feedback has received more support among researchers (Ferris, 2002; Hendrickson, 1984; Lalande, 1982; Robb et al., 1986). Robb et al. (1986) suggested that teachers should not waste time giving direct feedback to students if both direct and indirect methods are equally effective.

Frodesen (2001) also suggested that indirect feedback was generally more useful than direct correction in composing. He advised L2 writing teachers not to provide correction on all errors because it makes students feel overwhelmed and reduces their motivation for learning. Others have reported that indirect feedback may be more beneficial to students than direct feedback in editing because indirect feedback can guide learning and help the students solve problems by themselves (Lalande, 1982). In the case of Hedrickson (1984), the combined method of indirect and direct feedback was considered most beneficial for the students in the revision process, because some types of errors could be more readily corrected by students and others could not. For example, if students make an error concerning a noun ending, they can correct their own error by using the cues that a teacher gives, or by referring to a grammar book. However, they may have more trouble choosing appropriate words in context and using acceptable sentence structures if only the locations of errors are indicated without any guidance as to how to correct the forms as shown in the study of Ferris et al. (2001). Depending on their

linguistic competence and exposure to language use, students have differing levels of difficulty when asked to correct errors if teachers do not give them enough information.

Supposing indirect feedback is superior to direct feedback for pedagogical reasons, the next issue may be the level of explicitness or salience of indirect feedback (Ferris et al., 2001). However, there have only been a few studies performed that examine the effectiveness of indirect feedback across levels of explicitness.

In a study of 134 Japanese EFL students, Robb et al. (1986) explored whether the salience of indirect feedback influenced students' accuracy, fluency, and syntactic complexity. They classified indirect feedback into three subcategories: coded, non-coded, and marginal feedback. First, coded feedback is a method in which teachers provide a coding scheme that indicates the types of student errors, such as noun ending and tense, etc. Students are supposed to correct the errors themselves. Second, non-coded feedback only marks the location of the errors by underlining or circling them; teachers do not specify the error types or correct forms. Third, marginal feedback signals the number of errors per line by writing in the margin. The students have to both discover and correct their errors. It is reasonable to consider marginal feedback the most challenging method for ESL writers. Contrary to this expectation, Robb et al. (1986) found no significant difference in the accuracy of students' writing among the two indirect feedback groups or the direct feedback group. The researchers noted that it was not worthwhile to provide full detailed feedback about the students' errors if the less salient feedback had the same effect as full feedback. The central issue addressed in this study was the improvement of accuracy by attending to various types of feedback treatment. Again, this study added

more evidence that students' accuracy does not improve much over a short period of time (in this case, only 7 months of class).

On the other hand, Ferris et al. (2001) more directly examined the impact of indirect feedback across levels of explicitness focusing on students' self-editing ability. They investigated how explicit error feedback needed to be in order for it to help ESL writers' self-correction ability. The subjects were 75 ESL students who were enrolled in a writing class at California State University, Sacramento. The students were randomly assigned to three groups: one experimental group with coded feedback, one experimental group with non-coded feedback, and one control group with no feedback.

Once again, it was expected that non-coded feedback would be more difficult for the students to use in correcting their texts. However, similar to the study of Robb et al. (1986), they found no significant difference in a 20-minute in-class self-correction activity between the coded feedback group and the group that had received non-coded feedback. As a result, Ferris et al. (2001) tentatively concluded that ESL teachers do not need to waste time using coded feedback while correcting students' errors.

Nevertheless, Ferris (2002) cautions that though her previous studies showed that less explicit feedback may be equally effective in the short term, this strategy may not give sufficient input to help students acquire linguistic structures and reduce errors over time. Furthermore, Ferris suggests that if the teacher provides students with a clear and consistent coded feedback, students may show more progress in the long run than if errors are simply underlined, but there has been little research undertaken to support this hypothesis to date.

Another result of the study by Ferris et al. (2001) indicated that there was a difference in the self-correction ability between international students and immigrant students. These researchers selected five grammatical categories such as verb, noun, articles, wrong word, and sentence structure. They distinguished “treatable errors” (verb, noun, articles) from “untreatable errors” (wrong word and sentence structure).

Treatable error is related to a linguistic structure that occurs in a rule-governed way and untreatable error is idiosyncratic, and the student will need to utilize acquired knowledge of the language to self-correct it (Ferris, 2002, p. 23).

A qualitative analysis of this study showed that immigrant students could discover and correct untreatable errors better than treatable errors. The researchers explained that because immigrant students had been exposed to real language use, they were better able to deal with the problems related to wrong word or sentence structure. They had knowledge of appropriateness of the language. On the other hand, international students who lacked this experience had more trouble solving untreatable errors than treatable errors.

Students of these two groups tend to have quite different language learning backgrounds: international students have more grammatical training and competence than immigrant students. Because most international students are “eye-based” language learners (Reid, 1998a, p. 6), they have learned grammar based English in the classroom, and they are familiar with grammatical meta-language like subject verb agreement and verb tense. However, they lack an intuitive knowledge of language use, such as understanding appropriate wrong word and sentence structure because they have little opportunity to actually hear and use the language. For example, they frequently produce

sentences which are grammatically correct but sound awkward to native speakers. On the other hand, immigrant students who are “ear-based” learners (Reid, 1998a, p. 4) have more practice using the language because they are immersed in the target language environment, but they often lack formal grammatical training.

It is possible that the subjects’ former background knowledge of English learning might have affected the results of the study by Ferris et al. (2001). In their study, most of the participants (82%) were immigrant students who had been residing in California and were attending a college-level ESL class. As mentioned before, both immigrant and international students showed a greater range of ability in correcting their grammatical errors than international students. Regarding this problem, Ferris et al. discussed how the immigrant students’ exposure to English might have influenced the results. That is, the finding that there was no significant difference in students’ self-correction ability between the coded and non-coded feedback group might have been affected by their background knowledge of grammar and exposure to language use.

Because as Reid (1998a) suggests, international or EFL students have different learning experiences and needs regarding teacher feedback than do immigrant students, and because only 18% of the subjects in the Ferris et al. (2001) study were international students, a replication study needs to be conducted (Ferris et al. did not design their study to distinguish these two groups and their observation of these differences arose from a post hoc analysis of the data, making it impossible to indicate if this difference was significant). This present research intends to investigate whether similar results will be obtained in a context where international students participate as subjects.

Perspectives Regarding Students' Responses

As previously discussed, there have been a lot of discrepancies among researchers as to the effect of error treatment. Zamel (1985) noted that teachers focused mostly on sentence-level grammatical errors and their comments were mostly vague and prescriptive. Other researchers warned about the negative aspect of overt error correction in terms of the quality of subsequent essays and student attitudes toward writing (Hendrickson, 1977; Semke, 1984).

Then, what about the students' preferences? Do ESL students want to receive error correction or are they offended by it? It is true that Truscott's argument (1996) that teachers' decision making should not be based only on student's preferences. However, teachers still need to listen to students' voices not because they should follow their opinions but because they should understand what their students expect in class. It may reduce the conflict between a teacher and students.

One of the first researchers to attempt to illuminate students' perspective of error treatment was Cohen (1987). Before that, researchers had focused on the nature and the most effective types of error feedback. In a very extensive survey of 217 students from New York State University, Cohen reported that many students consider the teacher's feedback valuable for improving their writing.

Radecki & Swale (1988) examined what attitudes students have toward different types of feedback along with their role as learners in the process of writing. Fifty-nine ESL students of various backgrounds and levels were surveyed and eight of them were interviewed. The students were divided into "receptor", "semi-receptor", and "resister" groups depending on their attitude toward teacher feedback. In the case of receptors and

semi-receptors, both groups preferred integrated types of feedback comments covering both content and grammatical accuracy. As to the role of students and teachers, these two groups responded that both sides have a responsibility in the process of error correction. Overall, the respondents showed positive and appreciative reactions to error correction. Regarding feedback types, many students preferred direct correction of all errors. The same result was recently reported by Chandler (2003).

Most researchers examined students' responses to general teacher feedback including content and forms. Leki (1991) focused more on the error correction issue, surveying 100 college-level ESL students in a U.S. institution. She found that ESL students were very concerned about grammatical accuracy in writing. The majority of the students (70%) responded that they favored comprehensive error correction, not selective correction in which only serious errors were marked by teachers. These students preferred indirect to direct error correction. They felt that they could learn more when they had an opportunity to correct errors after their errors were marked by their teachers. Chandler (2003) also reported similar students' responses as to feedback preferences.

Enginarlar's (1993) replication study of Radecki et al. (1988) surveyed 47 freshman-level EFL students in Turkey. Positive feelings toward teacher feedback were found, and student responses were very similar to those of Radecki et al. (1988). The most important implication of this study was its emphasis on a problem-solving approach to revision as a collaborative effort between teachers and students.

In a study by Hedgcock & Lefkowitz (1996), students preferred a combined type of written comment and individual conference. These researchers also found substantially different attitudes between ESL and Foreign Language (FL) student learners in

motivations for writing and attitudes toward feedback. FL students preferred form-focused feedback whereas ESL students wanted feedback on both content and form. Also, the ESL writers specifically disliked the red pen which was most frequently used in marking errors.

Ferris (1995b) first separated students' reactions to feedback on preliminary drafts versus final drafts. Her findings showed that students were very appreciative of teacher feedback and considered it valuable.

Based on literature about students' responses to error correction, Ferris (2002) critically reviewed and summarized studies regarding students' response to feedback.

- Students feel that teacher feedback on grammar and errors is extremely important to their progress as writers;
- Students in the most recent studies also see value in other types of teacher feedback (on ideas and organization);
- Student writers mostly favor comprehensive teacher marking of errors;
- Student writers, when given a choice of teacher marking strategies, tend to prefer that teachers mark errors and give them strategies for correcting them over either direct correction of errors or less explicit indirect methods;
- Students sometimes found teachers' marking systems confusing or cumbersome (p. 33-34).

Even though some researchers used to speculate that L2 students had negative feelings towards error correction (Semke, 1984), the findings of empirical studies have shown that most students want to receive error correction and consider it very helpful in enabling them to minimize their grammatical errors and improve the quality of their

writing rather than being harmful or offensive. Of course, students' preferences and opinions cannot be a major factor determining teacher's feedback as Truscott (1996) argued. Nonetheless, everyone would agree with the fact that teachers should consider students' needs in their decision-making process.

Summary

Based on the previously cited research, if teachers understand the students' strengths and weaknesses and provide appropriate feedback, teacher feedback appears to help students' self-correction ability, at least in the short-term. Regarding the level of explicitness of feedback, more research is required to verify the findings in the study by Ferris et al. (2001) and to apply them to both ESL and EFL students as well as immigrant and international student populations. Therefore, the purpose of the present study is to examine whether the level of explicitness of indirect feedback influences international students' self-correction ability.

Also, students' level of proficiency may affect their success in editing their own errors (Hendrickson, 1984; Rapp, 1988). As the results of a study by Rapp (1988) show, more proficient students might better detect and correct errors by themselves. Thus, proficiency levels will be included as a moderating variable in this study.

As Ferris (2002) pointed out, most of the survey studies about students' responses toward teacher error feedback have not been appropriately triangulated by examining the issue through various research frameworks. Hence, in this study, a brief survey of students will be administered as a part of the experimental design in order to provide additional information. However, it will not be the main focus of this thesis.

To fill the gap found in the review of literature and verify the findings of Ferris et al. (2001), a replication study will be conducted based on the following research questions.

Research Questions

1. Does teachers' error feedback help international students self-correct their grammatical errors?
2. Does the level of explicitness of indirect feedback influence international students' self-correction ability?
3. What factors predict international students' self-correction ability?
4. In this study, what are ESL students' attitudes toward error feedback for writing?

Hypotheses

In this study, four hypotheses stated in the null form will be tested.

1. Teacher feedback on grammatical errors will have no influence on international students' ability to correct these errors in their writing.
2. The type of teacher feedback, that is coded or non-coded, will have no effect on international students' ability to correct grammatical errors in their writing.
3. Students' proficiency level will have no influence on their self-correction ability.
4. Students' performance on a grammar test will have no influence on their self-correction ability.

Delimitations

This study has several delimitations. First, the study will only examine the short-term effect of teacher feedback on international students' self-correction, so it will not provide evidence as to whether or not successful error correction can lead to long-term development of accuracy in writing. Longitudinal research needs to be designed to closely examine this issue.

Second, this study will examine only one essay instead of multiple essays because of restrictions of the ELC. No ELC student would agree to participate in the study if they received either no feedback or less effective feedback from teachers on their grammatical errors in writing. Because this study will examine only one draft of students' essays, errors analyzed in their essays will be assumed as performance errors. However, it cannot be determined why students make errors, whether they have not acquired certain grammatical features, or they just make a mistake when composing. This study only attempts to identify what the students' errors are and whether they self-correct them. Determining why the students make errors is beyond the scope of this study.

Third, in this study, only students from the intermediate and advanced levels at BYU's ELC were selected as participants. Levels 1 and 2 students are beginners and were excluded in order to control possible learner variables. Since these beginners have not learned enough English to write their own essays, they may have much more trouble writing in terms of grammar and composition.

Fourth, this present study attempted to follow the design of Ferris et al. (2001), so the analysis was focused on only five error categories: verbs, noun endings, articles, wrong words, and sentence structures.

Finally, another delimitation is the reliability of the grammar test which will be conducted to examine students' knowledge about grammatical meta-language. The test contains only 18 items and is not detailed enough to measure the breadth of students' knowledge.

Chapter Three

Method

Introduction

This study investigated the effect of teacher error feedback on international students' self-correction ability, focusing on the level of explicitness of indirect feedback. In order to test the hypotheses formulated in Chapter Two, a one shot experimental design was employed. Quantitative data from one control and two experimental groups were collected and analyzed.

Variables

Independent variable. The independent variable of this study is teacher feedback. There are three feedback conditions: no feedback, coded-feedback, and non-coded feedback.

Dependent variable. The dependent variable in this study is students' self-correction ability. This construct is operationalized as the number of errors corrected by the students (adjusted by the number of errors marked).

Moderator variable. The moderator variable in this study is students' proficiency level as designated by the BYU's English Language Center.

Control Variable. There are two covariates included for data analysis. A base-line pre-test score, which is the number of errors marked in a composition, is used as a covariate for controlling initial individual differences in self-correction ability. Also, students' knowledge of grammatical meta-language which is measured by a grammar test was included as a covariate.

In addition, length of stay in the United States was intentionally controlled to reduce its effects on the results. Only the students who had resided in the United States less than two years were included in this study. Data from students whose spouses were native speakers or those who were from immigrant families were excluded in the analysis.

Participants

Students who enrolled in the English Language Center at Brigham Young University in the Fall Semester of 2003 were selected as participants for this study. This ELC is an institution running an intensive English program for academic purposes. The ELC has six different levels which are designated based on students' overall language proficiency. Levels 1 and 2 are considered as beginning, levels 3 and 4 intermediate, and levels 5 and 6 advanced (See Appendix H).

Initially, 129 students from levels 3 to 5 participated in a data collection process. However, in order to control the length of stay in English speaking countries, those who had been residing in the USA or other countries where English is spoken as a primary language for more than two years were not included in the data. Data drawn from 119 students were finally analyzed. The average length of stay in the United States was seven months. The range was from 1 month to 24 months.

The majority of students (91.6%) were international ESL students who had come to the United States holding a student VISA (F1) for the purpose of studying English. The major native language backgrounds were Korean (33%), Spanish (30%), Mongolian (11%), Chinese (10%), Japanese (9%), and others (7%).

Because Asian students are believed to be more concerned about grammatical accuracy than are learners from other culture, a statistical analysis (Chi-square calculation)

was performed to investigate the relationship between ESL students' cultural background and their concern about grammatical problems in writing. The analysis showed that the relationship between cultural background and concern for accuracy was weak ($\chi^2 = 2.528$, $df = 2$, $p = 0.282$). Based upon this result, students' cultural background was not included as a variable in this study.

Of all the participants, 63% were female. Most of the students were college-level students or adult learners. Their average age was 25 years, but ages ranged from 18 to 45. Many of them were studying English to pass the TOEFL test in preparation for entering U.S. institutions.

Instruments

Three instruments were utilized in this study: an in-class writing assignment and correction exercise, a grammar knowledge test to evaluate students' knowledge of grammatical meta-language, and a questionnaire to elicit information about their formal grammar training experience and their preferences or attitudes toward teachers' error feedback.

In-class Writing Assignment and Correction Exercise. In the first week of the Fall Semester, 2003, all the student participants from the control and experimental groups were given a 30-minute in-class writing assignment. The ELC diagnostic essay was used for the study in order to minimize any interruption of the ELC curriculum. All the students were supposed to write this essay because it is a part of the ELC requirements. However, only the essays written by the students who signed an informed consent were included in the data of this study. More than 90% of the students agreed to provide their essays as data.

Topics designated by the ELC had been drawn from a pool of possible topics for the Test of Written English (See Appendix F). Each level was given a different topic. In general, the quality of writing tends to be greatly influenced by topic. In this study, however, students' compositions were scored based on the number of grammatical errors they made, not on content or organization. Hence, even though the same topic was not assigned to all the students, this did not significantly affect the results of this study. For example, if students did not have knowledge of the *to*-infinitive, they could not use it correctly regardless of the topic.

The compositions were immediately collected by each teacher and delivered to the researcher. The students were told that their compositions would be returned in two weeks. Two weeks later, the students who were included in the experimental groups got back their first draft typed with either coded or non-coded feedback. No feedback was offered to the control group students. All the compositions with either feedback or no correction were typed to avoid possible effects of teachers' handwriting. The students were asked to self-correct their grammatical errors during an in-class 20-minute correcting session. The essays that the students corrected were collected upon completion.

Grammar Knowledge Test. A grammar knowledge test designed by Ferris et al. (2001) was given the participants in order to examine their knowledge of grammatical meta-language. This test was either administered at the same time or during the same week when the diagnostic essays were written. It consisted of three sections and the Error Type Key as shown in Table 2. The first section contained six sentences, each including one error of five types of errors described in the Error Type Key (See Appendix B). Students attempted to match the error occurring in each sentence with the correct

category described in the Error Type Key. For the second and third section, a sample essay in which six errors were marked was given. For the second section, students identified the types of errors in the sample essay and in the third section suggested a correction.

Questionnaire. A questionnaire designed by Ferris et al. (2001) was distributed to the participants after they self-corrected their essays (See Appendix C). This survey examined students' preferences and attitudes toward grammar feedback in writing classes.

Procedure

The student participants of each level were randomly assigned to three different treatment groups: one control group with no feedback, one experimental group with coded feedback, and one experimental group with non-coded feedback as shown in Table 1.

Table 1

The number of the participants by proficiency levels and treatment groups

Level/Group	Coded Group	Non-coded Group	No-feedback Group	Total
Level 3	18	19	14	51
Level 4	11	12	11	34
Level 5	12	10	12	34
Total	41	41	37	119

Control group. A control group was formed for comparison. No feedback treatment was provided to the students in this group.

Coded feedback group. The participants in this group received coded feedback in which five types of errors such as verbs, noun endings, articles, wrong words, and sentence structures were underlined. With regard to the types of errors, the most frequent five error types that ESL students made were selected for this study following Ferris et al. (2001), as described in Table 2.

Non-coded feedback group. For the participants in this group, only the location of errors was indicated by underlining the errors.

Table 2

Description of error categories used for feedback and analysis (Ferris et al., 2001)

Verb errors (V)	All errors in verb tense or form, including relevant subject-verb agreement errors.
Noun ending errors (NE)	Plural or possessive ending incorrect, omitted, or unnecessary, includes relevant subject-verb agreement errors.
Article errors (Art)	Article or other determiner incorrect, omitted, or unnecessary.
Wrong word (WW)	All specific lexical errors in word choice or word form, including preposition and pronoun errors. Spelling errors only included if the (apparent) misspelling results in an actual English word.
Sentence structure (SS)	Errors in sentence/clause boundaries (run-ons, fragments, comma splices), word order, omitted words or phrases, unnecessary words or phrases, other unidiomatic sentence construction.

There were other types of errors found in the students' essays such as adjectives and adverbs. In this study, however, only the five error types which are described in Table 2 were analyzed in order to follow the design of the original study done by Ferris et al. (2001).

Inter-rater Reliability

One of the ELC grammar teachers¹ and the researcher counted the number of errors that occurred in students' essays and provided feedback on grammatical errors. Before they started the scoring, 10% of the essays were randomly selected, and the two raters counted the number of errors as well as assigned each error to one of the five error categories. To compare the number of errors counted by each rater, an inter-rater reliability was calculated by a Pearson correlation coefficient ($r = .98$, $r^2 = .96$). An agreement coefficient was also calculated (90%) in order to estimate a proportion of errors that were classified the same by two raters. Since two raters achieved a high agreement for both the number of errors counted and assignment of error types, they divided the rest of the essays and individually rated them.

In summary, a diagnostic essay was given to all the participants along with the grammar test at the beginning of the semester. Then, different error treatment was offered to their essays. Two weeks later, the students were asked to self-correct their grammatical errors in class. Table 3 summarizes the schematization of the research design employed in this study.

¹ This rater has been teaching grammar and writing for several years at the English Language Center of Brigham Young University. She received an M.A. in TESOL at the same institution.

Table 3

Schematization of the research design

Treatment group	The first week of September, 2003	The second week of September, 2003	The third week of September, 2003
Control group			
- No feedback group	An essay	No treatment	A 20-minute self- correction task
Experimental group			
- Coded feedback group	An essay	Underlining errors with codes of error	A 20-minute self- correction task
- Non-coded feedback group	An essay	Underlining errors without explanation	A 20-minute self- correction task
All groups	Grammar test		Questionnaire

Data Analysis

Data. In this study, the grammatical errors that occurred in one essay were analyzed. It was assumed that all errors were performance errors instead of competence errors because this study examined on students' production of language, which is performance, not competence. Since multiple essays were not analyzed here, deciding whether errors were competence or performance errors was beyond the scope of the present study.

Statistical procedures. All the compositions were typed to facilitate analyzing the data. To avoid typos, all the essays were reviewed by an assistant. A comparison was

made between the first and second drafts of each essay after feedback had been provided. The number of words in both the first and second draft was counted, using Microsoft Word XP in order to calculate normalized error scores and to follow the procedures of Biber, Conrad, and Reppen (1998). The average number of errors per text was counted. Error counts have been normalized by dividing the number of errors by the number of words and multiplying by a standard which was 219 in this study, following the procedure of Ferris et al. (2001).

Regarding the number of errors marked, an Analysis of Variance (ANOVA) was run to examine whether students from the three treatment groups as well as the three proficiency levels had an equal ability of accuracy in writing.

Concerning the number of errors corrected, Ferris et al. (2001) ran an ANOVA to analyze the data. In their study, the dependent variable, self-correction ability, was measured by a self-correction ratio represented as percentage data. The problem of their operationalization is that they did not control for the effect of the initial difference in the number of errors that the students made. For example, if students made ten errors, they would have ten chances for correction, whereas those who made two errors could correct two errors at most. In both cases, the correction rate would equal 50%. However, it cannot be said that both students have the same self-correction ability.

In this study, therefore, students' self-correction ability was operationalized as the number of errors corrected. Since students' self-correction ability is influenced by the number of errors marked, Analysis of Covariance (ANCOVA) was used instead, including a total number of errors and grammar test scores as covariates.

Students' self-correction ability was measured in five error categories and for all types of errors. Therefore, there were six different dependant variables in analysis, so the alpha level was adjusted to .01 (.05/6) to avoid Type 1 errors. For all statistical analyses, SAS was used.²

Hypothesis One. In order to examine whether teacher error feedback made a difference in students' self-correction, a Tukey's t-test was conducted between the no-feedback control group and two experimental groups.

Hypothesis Two. A Tukey's t-test comparing the coded group and non-coded group was run to examine Hypothesis Two-- whether the level of explicitness of indirect feedback influence international students' self-correction.

Hypothesis Three and Four. ANCOVA was run to find the factors influencing students' self-correction ability. Grammar test scores and the number of errors marked were used as covariates to control for their possible effects on students' correction ability. Treatment group, proficiency level, and group by level interaction were used as the major factors for analysis.

Survey responses. Finally, a survey that was conducted to reveal out students' preferences on error feedback was analyzed. Frequency of students' responses was tallied and percentages were calculated.

² Statistical analysis was conducted with assistance by the Department of Statistics at Brigham Young University.

Chapter Four

Results

The purpose of this study was to examine the influence of teachers' error feedback on international students' self-correction ability. In this chapter, the results of statistical analyses performed in order to test the four hypotheses posed in Chapter Two will be presented. First, descriptive statistics concerning the number of errors marked by the raters will be presented, followed by inferential statistics (ANOVA). Second, the results of the grammar test will be shown. Third, with regard to the number of errors corrected by the students, descriptive statistics and inferential statistics (ANCOVA) will be presented. Fourth, the results of an ANCOVA examining factors which influence students' self-correction will be reported. Finally, students' attitudes and opinions regarding feedback types will be also presented.

Errors Marked

The number of errors in the five categories (verb, noun ending, article, wrong word, and sentence structure) occurring in a diagnostic essay were counted and normalized for comparison. The average number of words written by the students per text was 219. For all the students, the average number of errors per 219 words was 29.8, which is 14% of the text.

Table 4 shows that level 3 students produced the most errors in all categories as well as for the total number of errors (mean = 36.6). Also, level 4 students made slightly more errors (mean = 27.5) than did those of level 5 (mean = 25.8). In the case of noun ending and article errors, however, the students from level 4 made fewer errors than did

level 5 students. For most of the error categories, the no-feedback control group made the fewest errors (mean = 21.8), respectively followed by the non-coded group (mean = 34.1) and the coded group (mean = 32.9). Therefore it was assumed that the students who were in the control group were stronger than those of the two experimental groups. This will be considered very important to remember in interpreting the findings of the results in this study.

Table 4

Average number of errors marked-- normalized means/ standard error³

	Verb	Noun ending	Article	Wrong Word	Sentence structure	Total
All subjects	4.9/0.3	2.7/0.3	4.0/0.3	7.3/0.4	10.9/0.5	29.8/1.0
By Level						
Level 3	6.1/0.5	4.1/0.4	4.9/0.5	8.1/0.6	13.6/0.8	37.9/1.5
Level 4	5.3/0.6	1.7/0.5	3.1/0.6	7.1/0.7	10.0/1.0	28.0/1.8
Level 5	3.2/0.6	2.4/0.5	3.9/0.6	6.8/0.8	9.1/1.1	22.9/1.8
By Group						
Coded	5.8/0.6	3.3/0.5	4.7/0.5	8.4/0.6	10.7/0.9	32.9/1.7
Non-coded	5.3/0.6	2.8/0.5	4.1/0.5	8.5/0.6	13.6/0.9	34.1/1.7
No feedback	3.5/0.6	2.0/0.5	3.0/0.5	5.1/0.6	8.4/0.9	21.8/1.8

The average number of words per text was 219. Error counts have been normalized by dividing number of errors by number of words and multiplying by a standard, which was set at 219.

³ Standard error is calculated by dividing standard deviation with squared N. In ANOVA, ANCOVA, and t-test analysis, standard error is more meaningful than standard deviation in a statistical sense.

In order to identify the difference in the number of errors marked in each proficiency level or treatment group, a two-way ANOVA was run. The dependent variable is the number of errors marked, and the two independent variables are proficiency level and treatment group.

Table 5

ANOVA results for the number of errors marked by proficiency level and treatment group

Error categories	Factor	Num DF	Den DF	<i>F</i>	<i>Pr > F</i>
All errors	Level	2	114	15.11*	< .0001
	Group	2	114	21.26*	< .0001
Verb	Level	2	114	4.41	0.0143
	Group	2	114	6.59*	0.0020
Noun ending	Level	2	114	1.72	0.1844
	Group	2	114	7.06*	0.0013
Article	Level	2	114	2.82	0.0638
	Group	2	114	3.13	0.0473
Wrong word	Level	2	114	9.24*	0.0002
	Group	2	114	4.36	0.0150
Sentence structure	Level	2	114	8.48*	0.0004
	Group	2	114	16.65*	< .0001

* ANOVA results: $p < .01$

ANOVA results in Table 5 show that there was a significant difference in the number of errors marked in students' diagnostic essays depending on proficiency levels. Regarding error categories, level made a difference in the total number of errors marked as well as wrong word and sentence structure errors.

Across the groups, as shown in Table 5, there was a significant difference in the total number of errors as well as verbs, non endings, and sentence structures. In the case of article and wrong word errors, these differences were not large enough to be significant at the $p < .01$ level.

Since there was a difference in error count by both proficiency level and treatment group, a Tukey post hoc analysis was conducted to find where the difference lay. The results in Table 6 show that there was a difference in the number of errors marked between levels 3 and 4 as well as between levels 3 and 5. However, there was no significant difference between levels 4 and 5 for all types of errors. Therefore, levels 4 and 5 students were classified as a homogenous group.

Interestingly, there was no significant difference found in the number of errors marked in the article category among all groups. It indicates that the students made a similar number of article errors regardless of their proficiency levels. This is probably because more than half of the participants (63%) were Asian students who frequently have trouble using articles correctly in writing due to the grammatical structure of their native languages. Table 6 also indicates that the coded and non-coded groups were different from the no-feedback control group. On the other hand, there was no difference between the coded group and non-coded group. Therefore, these two groups can be

regarded as a homogenous group. Overall the control group produced fewer errors than the two experimental groups.

Table 6

Significant difference in the number of errors marked by proficiency level and treatment group

By level			
Error categories/Level	Levels 3-4	Levels 3-5	Levels 4-5
All errors	+	+	0
Verb	0	+	0
Noun ending	+	0	0
Article	0	0	0
Wrong word	0	+	0
Sentence structure	+	+	0
By group			
Error categories/Groups	Coded vs. Non-coded	Coded vs. No feedback	Non-coded vs. No feedback
All errors	0	+	+
Verb	0	+	0
Noun endings	0	0	0
Article	0	0	0
Wrong word	0	+	+
Sentence structure	0	0	+

Note. + = significant difference; 0 = no significant difference

Students' Knowledge of Grammatical Meta-language

Students' knowledge of grammatical meta-language was examined by the grammar knowledge test designed by Ferris et al. (2001). Table 7 shows the results, which are arranged by proficiency level and treatment group.

Table 7

Grammar scores by proficiency level and treatment group

	Mean	Std. Error	<i>F</i>	<i>p</i> value
All subjects				
By Level			32.633*	.000
Level 3	5.921	.504		
Level 4	6.336	.612		
Level 5	11.944	.614		
By Group			.314	.731
Coded	7.705	.570		
Non-coded	8.314	.577		
No feedback	8.138	.589		

* ANOVA results: $p < .01$

It can be expected that the higher the students' level was, the higher score they achieved on the grammar test. However, it is not possible to anticipate whether the three groups had similar grammatical knowledge at the beginning of the experiment since these three groups were randomly formed. Therefore, it is very important to examine whether the three groups had an initial difference on the grammar test score because a group that

includes more grammatically competent students might correct more errors regardless of teacher feedback.

In particular, whether or not students are familiar with grammatical meta-language would be an important factor in utilizing coded feedback. If students did not know the terminology that was used by teachers in providing feedback, they could not correct their errors. This would occur as a result of unfamiliarity with grammatical terms, not because teacher feedback did not have an effect on their self-correction. In this study, therefore, the students' knowledge of grammatical meta-language was measured by the grammar test, and the scores were included as a covariate for the purpose of controlling its effect on self-correction. Ferris et al. (2001) did not control for this effect in their statistical analysis. Only the correlation between grammar test scores and the number of errors marked, as well as the number of errors corrected, were examined in their study design.

As anticipated, there was a significant difference in the grammar scores across levels. According to Tukey post hoc results, there was a significant difference between levels 3 and 5 as well as between levels 4 and 5. However, there was no significant difference found between levels 3 and 4. Therefore, the students from levels 3 and 4 had very similar grammatical knowledge whereas level 5 students' grammar knowledge was better than other levels. This finding does not correspond to the comparison of the number of errors that the students produced in their compositions. In that comparison, levels 4 and 5 were classified as a homogeneous group. A detailed discussion of this will be presented in Chapter Five.

On the other hand, there was no significant difference across the three groups in the grammar test score, so it can be assumed that students from all groups initially possessed similar meta-linguistic knowledge.

Self-corrected Errors: Effects of Teacher Feedback

According to Table 8, level 3 students corrected the most errors (mean = 11.4), respectively followed by level 4 (mean = 10.4) and level 5 (mean = 8.5). These mean scores of corrected errors were influenced by the number of errors that the students initially made.

Table 8

Number of errors corrected by students (means/ standard error)

	Verb	Noun ending	Article	Wrong Word	Sentence structure	Total
All subjects	2.0/0.2	1.2/0.1	1.5/0.1	2.7/0.2	2.9/0.2	10.1/0.5
By Level						
Level 3	1.9/0.3	1.4/0.2	1.5/0.2	2.7/0.3	3.0/0.4	11.4/0.8
Level 4	2.3/0.3	1.4/0.3	1.1/0.3	2.9/0.3	3.4/0.4	10.4/0.9
Level 5	2.0/0.4	1.0/0.3	2.0/0.3	2.4/0.3	2.2/0.5	8.5/1.1
By Group						
Coded	2.5/0.3	1.4/0.2	2.4/0.2	3.1/0.3	3.7/0.4	13.6/0.8
Non-coded	2.6/0.3	1.6/0.2	1.5/0.2	3.4/0.3	3.8/0.4	13.0/0.9
No feedback	1.0/0.3	0.7/0.3	0.6/0.2	1.5/0.3	1.1/0.4	3.7/1.0

All error counts have been normalized.

That is, level 3 students corrected more errors than students from levels 4 and 5 just because they had more errors to correct, not because they had better correction ability. That is why percentage data of correction rate is not the best predictor of students' self-correction ability.

Table 8 and Figure 1 show that the no-feedback control group students achieved the lowest mean score for total corrected errors among the three treatment groups. On the other hand, the performance of the students from the coded group was almost the same as that of the non-coded group students. This figure indicates teacher feedback is beneficial to the students when they self-correct their grammatical errors.

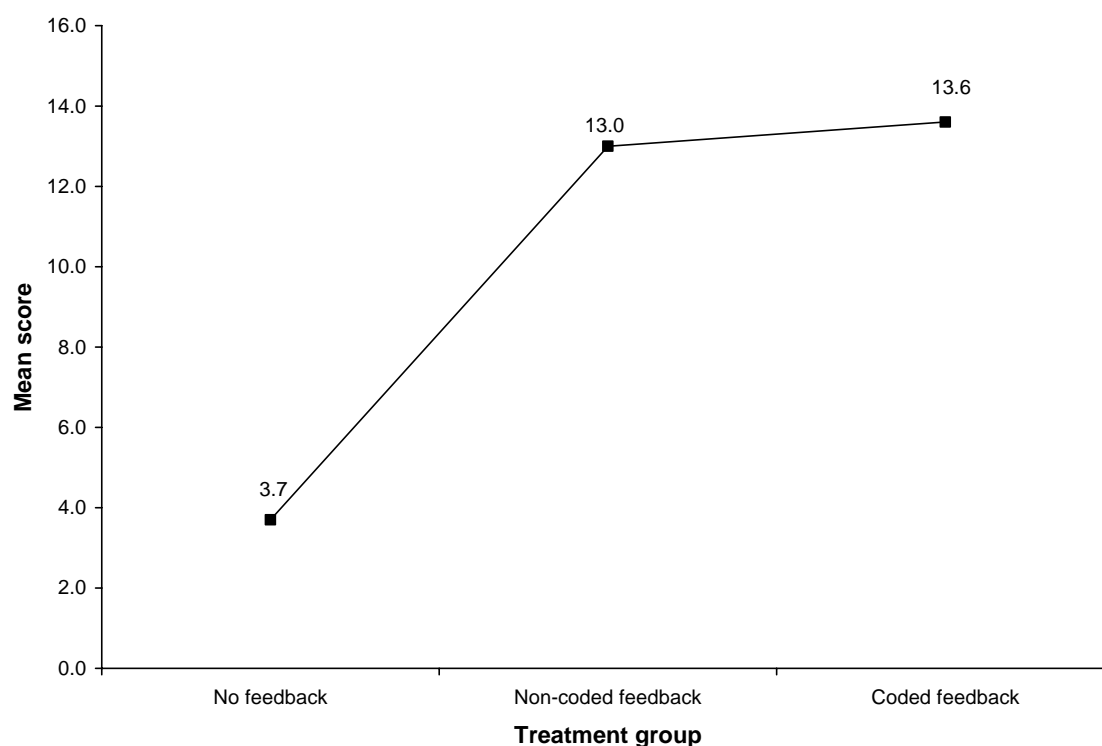


Figure 1. Mean scores of the total number of errors corrected by each treatment group

Figure 2 displays the mean scores of the corrected number of errors by five error categories. Corresponding to the total errors, teacher feedback did help the students self-correct their errors for five grammatical categories. Interestingly, the non-coded group students performed better than the students who received coded feedback, which was more explicit (except for the article category). However, this difference was not statistically significant as shown in Table 10.

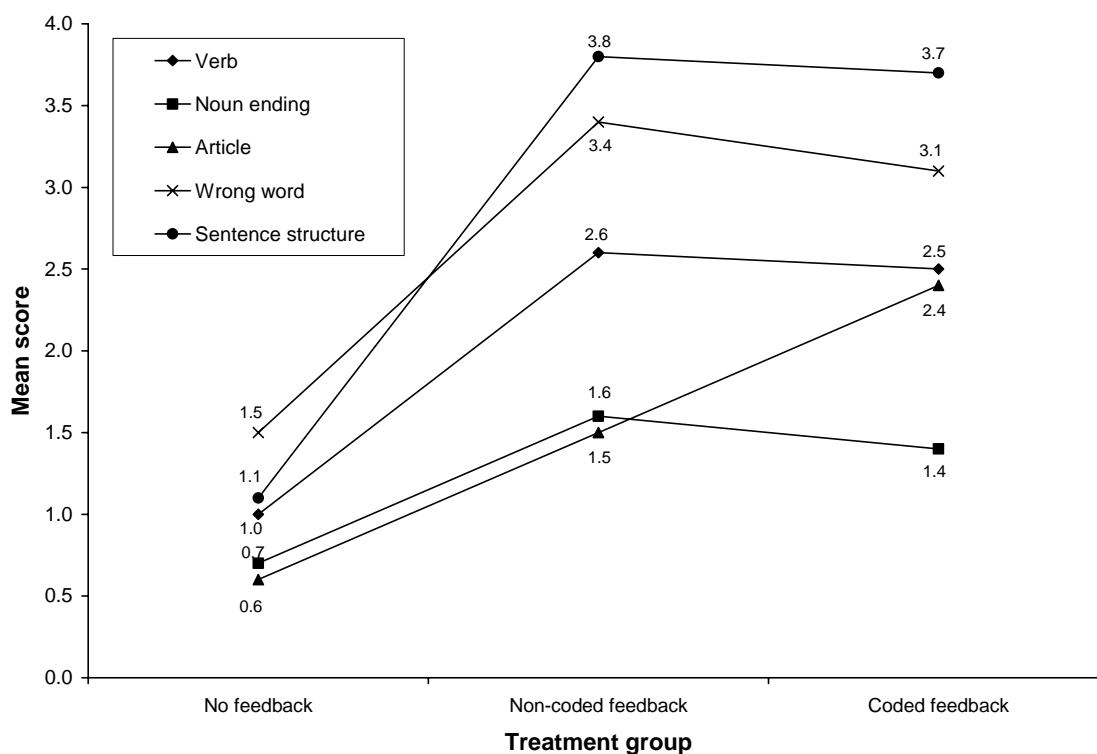


Figure 2. Mean scores of the number of errors corrected across five error categories

Factors Influencing Students' Self-correction

To test Hypotheses formulated in Chapter Two, an ANCOVA was run. Students' self-correction ability was operationalized as the number of errors corrected by the

students, adjusted by the number of errors marked. This was to control for the initial difference in numbers of errors.

According to the ANCOVA shown in Table 9, there are three factors (treatment group, proficiency level, and group by level interaction) and two covariates (the number of errors marked, and the grammar test score) with one dependent variable which is the number of errors corrected by the students.

Table 9

ANCOVA: Factors influencing students' self-correction ability

Effect	Num DF	Den DF	<i>F</i> value	<i>Pr</i> > <i>F</i>
Covariates				
Total errors	1	108	8.42*	0.0045
Grammar test	1	108	4.34	0.0395
Factors				
Group	2	108	32.36*	< .0001
Level	2	108	1.88	0.1571
Group × Level	4	108	0.86	0.4921

* ANCOVA results: $p < .01$

Treatment group was the strongest predictor of students' self-correction ability. This means that teacher feedback did have an effect on students' self-correction. Proficiency level did not affect the dependent variable, and there was no group by level interaction found. Again, the effect of proficiency level on self-correction is different from that on

grammar test score and accuracy in writing which was measured by the number of errors marked.

It is not surprising that the number of errors corrected was affected by the total number of errors marked. In this analysis, the grammar test score did not correlate strongly with results of the self-correction task. However, it might be said that something is going on here because the achieved p value is 0.0395. A detailed discussion will be presented in Chapter Five. Since treatment groups made a difference in the number of errors corrected, a Tukey post hoc comparison was run as summarized in Table 10.

According to Table 10, there was a significant difference found between the control group and the two experimental groups for most of the error categories except for noun endings. However, the achieved p value of noun ending errors ($p = .0140$) was very close to the alpha set earlier, though technically it was not less than .01. Therefore, it can be speculated that a significant p value might be achieved if more participants were included in the data.

As these results indicate, the students who were provided with grammar feedback whether explicit or implicit outperformed the students from the control group in which no feedback was given. In particular, achieved p values for most of the categories were significant enough to reject the null hypotheses formulated in Chapter Two ($p < .0001$) except for the noun category ($p = .0140$).

In contrast, there was no significant difference found between the coded and non-coded feedback group for all grammatical categories. In the case of the article category, however, the achieved p value ($p = .0102$) was close to the alpha ($p < .01$) set for the analysis. This was different from other categories which were not significant even at the

$p < .05$ level. Therefore, it might be said that more explicit feedback helped the students self-correct article errors. For the rest of the error categories, more explicit feedback does not appear to help students self-correct their grammatical errors.

Table 10

Errors by categories corrected by each treatment group

Control versus experimental groups					
Categories	Estimate	Standard errors	DF	t value	$Pr > t $
Verb	3.0612	0.7576	108	4.04*	< .0001
Noun ending	1.5547	0.6222	108	2.50	0.0140
Article	2.6876	0.6031	113	4.46*	< .0001
Wrong word	3.4188	0.7870	113	4.34*	< .0001
Sentence structure	5.3041	0.9976	108	5.32*	< .0001
All errors	19.096	2.3852	108	8.01*	< .0001
Coded versus non-coded groups					
Categories	Estimate	Standard errors	DF	t value	$Pr > t $
Verb	-0.07188	0.4155	108	-0.17	0.8630
Noun ending	-0.1968	0.3498	108	-0.56	0.5750
Article	0.8591	0.3287	113	2.61	0.0102
Wrong word	-0.3102	0.4065	113	-0.76	0.4470
Sentence structure	-0.1454	0.5506	108	10.26	0.7922
All errors	0.6429	1.1993	108	0.54	0.5930

* t-test results: $p < .01$

In summary, the results indicated that teacher feedback had a positive influence on students' self-correction ability. With regard to the level of explicitness of feedback, however, it suggested that more explicit feedback did not help the students self-correct their grammatical errors.

Questionnaire Responses

One hundred and eighteen respondents completed the questionnaire which examined their grammar knowledge and attitudes toward error correction. The results, summarized in Appendix D, show that the majority of the students (86.5%) responded that they received prior grammar instruction “a lot” (48.3%) or “sometimes” (38.2%). Only 13.5% of the respondents indicated that they had “very little” (11%) or had “never had grammar” (2.5%) instruction before.

More than one third of the respondents said that their English teachers had pointed out errors in the four grammatical categories (verbs, articles, wrong words, and sentence structures). These same grammatical categories were identified by half of the students as problem areas. Unlike other error categories, only 15.3% of the students responded that their teachers identified noun ending errors in students' compositions. Only 23.7% of the respondents said that they self-identified noun ending errors.

The majority of the students (44.1%) responded that they had serious grammatical problems which caused major problems in composition. On the other hand, 28.8% of the respondents stated that grammatical problems were “not serious” in writing and 20.3% said that other issues such as content or organization were more important than grammar.

More than half of the students (57%) claimed that they enjoyed writing in English. Finally, 64.4% of the students responded that they had a high concern about grammatical accuracy in writing.

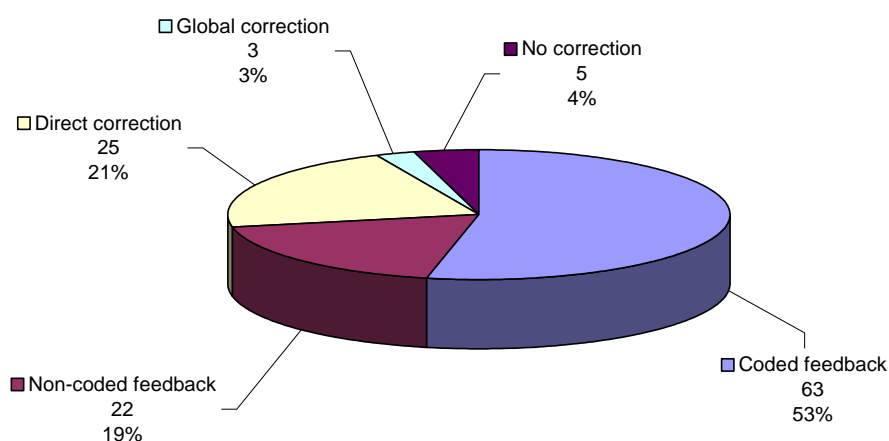


Figure 3. Students' preference for error feedback types

Figure 3 also shows that a significant majority (53%) responded that they preferred coded feedback (underlining errors with error codes or labels), followed by 21% of students who preferred direct correction and 18.7% non-coded feedback. Almost every student (96%) responded that they wanted writing teachers to correct grammatical errors occurring in compositions either indirectly or directly. Only 4% of the students said that they did not want to receive error correction.

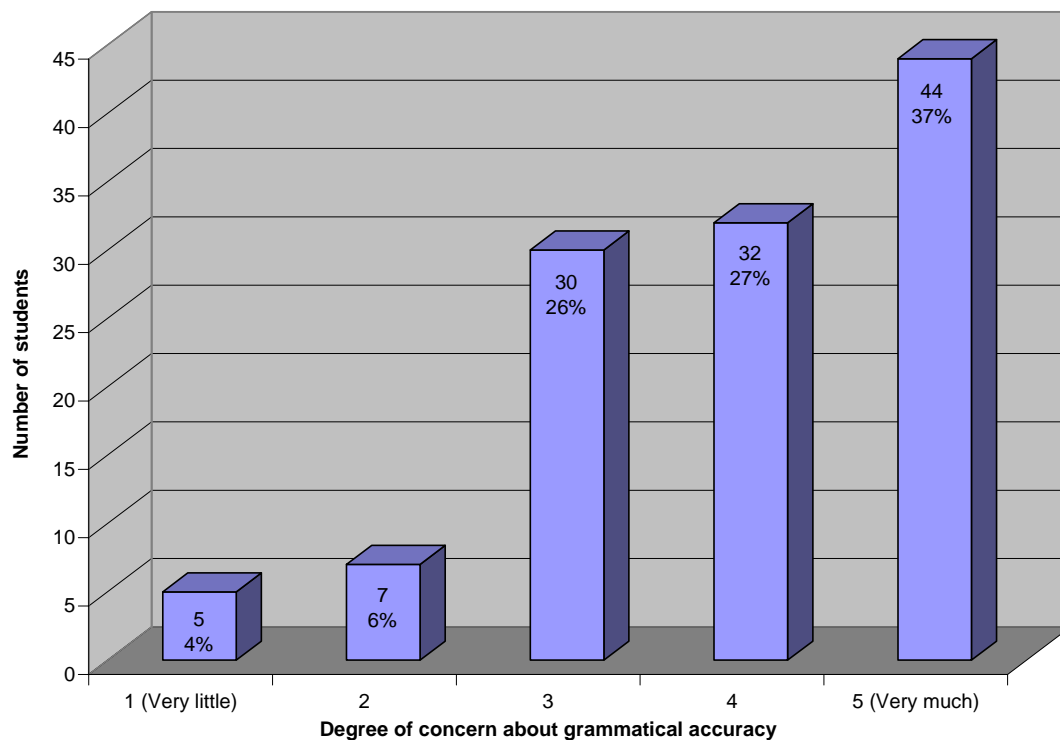


Figure 4. Students' concern about grammatical accuracy

The data shown in Figure 4 was elicited from the students' demographic survey (see Appendixes D and E). According to Figure 4, 64% of the respondents had a relatively high degree of concern about grammatical accuracy. A very small portion of the students were not very concerned about accuracy.

Summary

The results of this study indicate that teacher feedback had a statistically significant effect on international students' self-correction ability. However, the degree of explicitness of feedback had no influence on a self-correction task. The moderator variable, proficiency level, was a weak predictor of correction ability. Performance on the

grammar test that measured students' knowledge of grammatical meta-language seemed to be a factor to be considered though it was not statistically significant in the analysis.

Finally, the results of the questionnaire showed the discrepancy between the results of the experimental study and what students preferred in a writing class.

Chapter Five

Discussion and Conclusion

This study was conducted to investigate the effect of teacher error feedback on international students' self-correction ability. Whether more explicit error feedback helps ESL students self-correct grammatical errors was also investigated along with students' attitudes toward those different feedback methods: coded versus non-coded feedback. The present study tested the following hypotheses.

Hypotheses

1. Teacher feedback on grammatical errors will have no influence on international students' ability to correct these errors in their writing.
2. The type of teacher feedback, that is coded or non-coded, will have no effect on international students' ability to correct grammatical errors in their writing.
3. Students' proficiency level will have no influence on their self-correction ability.
4. Students' performance on a grammar test will have no influence on their self-correction ability.

Findings of the Study

Hypothesis One. The first hypothesis in this study can be rejected. The main finding of this study showed that there was a statistically significant difference in students' self-correction ability between the control group and the experimental groups. As mentioned in the previous chapters, no feedback treatment was given to the control group students. These students had to identify their grammatical errors and correct them

without any teachers' intervention. On the other hand, feedback on grammatical errors was provided to the students from the two experimental groups: coded and non-coded. For both groups, locations of errors were marked by the researchers and the students only corrected those errors.

It was evident that the students from the two experimental groups who were provided grammar feedback, either coded or non-coded, outperformed the control group students who did not receive any feedback on their errors. Hypothesis One can be rejected ($p < .0001$). Teachers' feedback had a positive influence on the international students' ability to self-correct their grammatical errors in writing.

This finding corresponds to studies that support teacher error feedback on students' self-correction (Chandler, 2003; Fathman et al., 1990; Ferris et al., 2001; Makino, 1993). Fathman et al. (1990) specifically found that ESL students seem to have trouble correcting grammatical errors by themselves without teachers' intervention. Not all of the research agrees, however, on the positive influence of teachers' feedback. These findings do contradict Truscott's (1996) argument that error correction was useless for L2 students.

It is not surprising that ESL students would have difficulty correcting grammatical errors by themselves. Even native speakers have a hard time detecting their own errors. That is one of the reasons why college students visit a writing center to edit their papers with a tutor.⁴ If native speakers sometimes miss grammatical errors, then this issue is even more problematic for ESL learners. They experience more difficulty finding their grammatical errors than L1 students, but once the location of errors is identified, they only need to concentrate on correcting them. Thus, teacher feedback seemed to have

⁴ This was drawn from a personal observation in Brigham Young University's Writing Center.

an effect on students' self-correction; however, it cannot be claimed that it helps students to self-edit their errors. Furthermore, whether teacher feedback causes acquisition of forms or not is not dealt with in this study.

Hypothesis Two. The null hypothesis (The type of teacher feedback, that is coded or non-coded, has no effect on international students' ability to correct grammatical errors in their writing) cannot be rejected since there was no significant difference found in self-correction between the coded and non-coded feedback group.

As mentioned in Chapter Four, the article among five grammatical categories appeared to have a different tendency from other types of errors. (These five grammatical error categories were selected as the most frequent types of errors that ESL students make when composing.) For other error categories, the level of explicitness of teacher feedback did not make a significant difference in students' self-correction ability regardless of the alpha level set, either $p < .05$ level or $p < .01$ level. None of the other grammatical categories were significant even at the $p < .05$ level. However, there was a significant difference found in students' ability to self-correct article-related errors between the coded group and the non-coded group if the alpha as set as the $p < .05$. It means that the coded feedback, which is more explicit type of feedback, helped students self-correct their article errors in writing.

Thus, something different appears to be happening with article errors. One possible reason for this difficulty with articles may be a result of the majority of the participants in this study being from Asian countries. The native languages in these countries (e.g. Chinese, Japanese) do not have the category of articles. Since these students normally have a hard time using articles correctly, they need a teacher's help to

know whether to use articles or not. Furthermore, there are only three possibilities for choosing appropriate article usage: the definite, indefinite, and null form. Therefore, if their article errors are pointed out by a teacher, students can easily realize and fix their errors. In a practical sense, a high probability that the students guessed a correct answer might result in a better correction than with errors from the other categories. For example, students are less likely to select a correct answer in the case of sentence structure errors than article errors.

The finding regarding Hypothesis Two supports the claim of Ferris et al. (2001) that teachers do not need to waste time and effort providing codes of errors if coded feedback has the same effect as non-coded feedback.

The results of this study, however, are different from those of a study done by Makino (1993) where he found that more explicit type of teacher error feedback on students' compositions resulted in successful self-correction of their grammatical errors. Why then does the discrepancy between the present study and Makino's study happen? In the present study, the effect of two different feedback methods, coded versus non-coded, on self-correction was compared. The results showed a positive influence of teacher error feedback on students' self-correction ability. However, coded feedback did not help the students self-correct their grammatical errors in writing.

On the other hand, Makino examined three different types of feedback methods: underlining the errors, identifying in the margin the number of errors included in sentence, and providing no feedback. Because this researcher examined different types of indirect feedback, it is not possible to examine the discrepancy between Makino's (1993) study and the present research. In the case of the present study, the students from either the

coded-group or the non-coded group were supposed to correct their grammatical errors which were identified by the researcher. The only difference between the two groups was the degree of explicitness of feedback. In contrast, Makino compared one group in which the location of errors was identified by underlining them, to the other group in which only the number of errors made was given to the students without identifying the location. Thus, the students from the second group had to find out their errors and correct them. That is, the first group performed a self-correction task whereas the second group did a self-editing task. This may be a reason why Makino had a different result between two groups. As a result of this difference in tasks, his findings were different from those of the present study.

Hypothesis Three. Since there was no apparent connection between the students' proficiency level and their ability to correct grammatical errors in writing, Hypothesis Three (Students' proficiency level has no influence on their self-correction ability) cannot be rejected. Proficiency level did not prove to be a reliable factor to predict the students' self-correction ability. This finding does not support that of Rapp (1988), which reported that students from higher proficiency levels performed better in self-correction tasks.

This finding from the present study can be explained based on the research design employed. The comparison of self-correction among three proficiency levels was based on the number of errors corrected by the students. It did not deal with the difficulty or quality of errors. According to the qualitative analysis of the data, level 5 students made more sophisticated errors than level 3 students. For example, a level 5 student made an error regarding the use of the present perfect passive form (have been -ed) whereas a level 3 student incorrectly used a past form of a verb (tell/ told). These two students

corrected their errors, and in both cases this change was counted as one correction.

However, it cannot be claimed that these two students had the same self-correction ability concerning verb errors. That is possibly why proficiency level did not make a difference in the number of errors corrected by the students.

Hypothesis Four. The grammar test score was not a statistically significant factor in determining the students' self-correction ability ($p < .0395$). Hence, Hypothesis Four (Students' performance on a grammar test will have no influence on their self-correction ability) cannot be rejected.

In this study, the influence of proficiency level was different depending on the types of comparison. As to the number of errors marked, level 3 students were different from both level 4 and level 5 students, whereas there was no significant difference found between levels 4 and 5. On the other hand, performance on the grammar test showed a different result. Level 3 and 4 students turned out to be more of a homogenous group since the students from these two levels performed significantly worse on the grammar test than did the level 5 students. Regarding the number of errors corrected, all of the groups performed equally as well.

Why was there this apparent discrepancy in the students' performance? This finding does not correspond to that of Ferris et al. (2001). Those researchers did not analyze the data using an ANCOVA as was done in the present study. Instead, they conducted a correlation analysis between the grammar test scores and the number of errors marked as well as the number of errors corrected. A significant correlation was found between the grammar test scores and the number of errors corrected. Based on this result, they claimed that students' knowledge of grammatical meta-language had a

positive influence on self-correction even though it did not affect whether students make grammatical errors or not.

Based on the findings of the present study and Ferris et al. (2001), it appears that there is little relationship between meta-linguistic knowledge and accuracy in writing. It might be explained by the difference between meta-linguistic knowledge which is learned and knowledge about how to correctly use what is acquired. That is, familiarity with grammatical terminology does not always guarantee the correct use of forms in composing. In addition, self-correction seems to be a different ability than accuracy in writing and knowledge of grammatical meta-language.

Ferris et al. (2001) found a significant correlation between students' performance in the grammar test and their self-correction ability. Although it was not proven through a statistically significant factor in the present study, the grammar test score might be considered an important factor in predicting students' self-correction ability (it was significant at the $p < .05$ level although not at the $p < .01$). It is likely that grammatical knowledge would have been significant if there had been more participants in the study. Regarding this issue, further research needs to be conducted.

As shown in the explanation of Hypothesis Three, proficiency level was not a significant factor in predicting students' self-correction ability. It seems that grammar test scores were a better predictor of students' self-correction ability than was their overall proficiency level even though self-correction ability was not found to be statistically significant. If students are not familiar with grammatical meta-language, they will not understand teachers' feedback using error codes and grammatical terms. However,

whether knowledge of grammatical meta-language really has an effect on the success of self-correction should be investigated in further research.

Questionnaire Responses. The questionnaire students completed provided data regarding their attitudes toward teacher feedback. Most of the students preferred the coded feedback, first followed by direct correction and non-coded feedback. Based on the literature review, there were different perspectives regarding error feedback. One of the common reasons that advocates of a process approach do not support error correction is students' affective response. For example, Semke (1984) claimed that ESL students were offended when their errors were corrected by their writing teacher. Citing Semke (1984), Truscott (1996) also argued a negative perspective of teacher error feedback in writing. Through the empirical studies, however, many other researchers found that ESL students have a positive feeling toward teacher error feedback, believing it would ultimately be helpful for their writing rather than being offended by those corrections (Chandler, 2003; Enginarlar, 1993; Leki, 1991). Also, the findings of this study showed that only a small number of students (5 out of 118 students) did not want to receive error correction. However, there was no evidence found as to why these students did not like receiving feedback since the questionnaire did not contain any questions that addressed this issue. As mentioned before, the questionnaire was not extensive enough to investigate the details of students' opinion about error feedback. This was a limitation of the questionnaire.

As suggested in the previous literature (Chandler, 2003; Enginarlar, 1993; Leki 1991), the students in the present study preferred indirect feedback to direct feedback. These researchers explained that the students seemed to think that they could learn more

if they had an opportunity to go over their errors and self-correct them after they were given error feedback from their teachers. The similar attitude of the students in the present study can be explained in part by their apparent motivation to learn English. Most of the students (83%) showed a positive attitude toward writing in English. The survey reflected that they might have a high motivation to learn English writing because of their positive attitude.

Pedagogical Implications

The Role of Teacher Feedback on Students' Self-correction. Based on the empirical evidence from this study, it seems that students could better correct their errors when a teacher provided feedback on grammatical errors. This result helps ESL writing teachers see the need to consider the effect that their written feedback may have on students' ability to self-correct although whether or not successful self-correction could lead to acquisition is not dealt with in this study. Furthermore, the need for teacher error feedback arises from the students' responses. As shown in the survey results, most of the students wanted to receive error feedback from their writing teachers.

The Level of Explicitness of Indirect Error Feedback. As Ferris et al. (2001) discussed, the finding that there was no significant difference found in students' self-correction between the coded feedback and non-coded feedback groups has a practical implication for ESL writing teachers. Providing coded feedback to student writing requires more time and effort than non-coded feedback. Therefore, if these two feedback methods have the same effect, why do ESL teachers offer coded-feedback? Rather than taking additional time to provide codes of errors and explanations, they could better spend their time preparing materials and helping students in other ways.

However, based on these findings which were obtained from a short-term experimental design, it is not possible to speculate whether coded feedback helps ESL students to edit their grammatical errors by themselves or to improve their interlanguage development over the long-term. In fact, it cannot be determined if coded feedback always has an equal effect to that of non-coded feedback. Depending on students' proficiency levels and the types of errors made, coding could be a valuable method to implement in writing classes. This issue needs to be examined in further research.

Importance of Self-Correction Task. Self-correction tasks provide students with an opportunity to correct their own errors. Chandler (2003) reported that self-correction has a positive long-term effect on improvement of accuracy in writing. Teachers can offer a self-correction opportunity for their students by providing indirect feedback on students' grammatical errors.

In fact, it is questionable whether students go over the feedback that teachers provide while investing time and effort to directly correct all errors. When their papers are returned to them, sometimes students only care about their grade, not teacher feedback, as shown in the survey of 50 Korean college students by Lee and Hong (2002). Therefore, it is important for teachers to have their students review their errors with the help of teacher feedback on multi-drafts before the final paper is graded.

Giving indirect feedback to students is considered more effective than either not correcting errors or directly fixing them. Direct correction is very tedious and time consuming though for teachers. However, many students preferred this method because it is fast and accurate for them in making corrections (Chandler, 2003). Also, less proficient students might be too cognitively challenged when they are asked to self-edit their errors

without teachers' help. For these students, teachers can provide the location of errors, requiring that students correct the errors by themselves. This self-correction seems to be easier than self-editing as the first finding of this study indicates. Therefore, the self-correction technique can be an intermediating process which leads to self-editing and helping students become more independent writers.

Self-correction has another important implication in light of students' perspectives. Students' responses in the questionnaire suggested that they preferred their errors to be treated in an indirect way so that they could also participate in the error correction process (Chandler, 2003). As Makino (1993) discussed, a self-correction task benefits L2 students because it enables them to have responsibility for learning.

Implications of Students' Preferences for Feedback. As shown in the results of the participants' survey, most of the ESL students wanted to receive error correction. Also, they preferred to receive coded feedback. One possible reason why ESL students like coded feedback is that it is a quick and easy indicator in helping them to correct their errors. In addition, they might feel it is less risky when correcting their errors in writing if codes are provided.

ESL writing teachers should not ignore their students' desire because correcting grammatical errors is tedious work and the effect of feedback is sometimes questionable. Even though teachers have a strong rationale for not correcting grammatical errors, it is not easy for them to defend themselves in front of students who expect grammar correction in class. The students commonly have high expectations of teachers. Leki (1991) pointed out how students' initial expectations of language classrooms were different than what they were actually provided with, and this cause conflicts between

teachers and students as mentioned earlier. Teachers should listen to their students so that they can more effectively design their instruction to satisfy the students' needs.

A final pedagogical implication that should be discussed is how to provide indirect feedback. Should teachers underline errors or provide more information? The findings of this study showed that there was no significant difference in students' self-correction between coded feedback and non-coded feedback. However, as the results of the present study's survey showed, the majority of the students preferred the coded feedback method. How can teachers deal with this discrepancy between the findings of experimental studies and what students actually want? Teachers might need to explain that they will only underline errors since both the coded and non-coded methods have the same effect. In this way, they can have more time to invest in planning lessons and preparing materials, rather than wasting time on providing all the codes and explanations about error categories. Justification of instructional methods should be clearly stated, otherwise, students might not be satisfied with their teachers because they do not understand the rationale behind their teachers' decision.

On the other hand, ESL writing teachers should be careful in concluding that both coded and non-coded feedback have an equal effect on students' editing ability. As mentioned earlier, this study examines student error correction, not their ability to identify such errors. Thus, it is entirely possible that giving coded feedback may have a more powerful effect on students' ability to locate errors in a text than doing non-coded feedback.

Limitations

The current study has a number of limitations, some of which resulted from the design of the original study and some of which emerged from the implementation of the research design.

First of all, the Ferris et al. (2001) study was designed to examine the effects of coded and non-coded feedback on learners' accuracy in correcting errors. As mentioned earlier, they did not concern themselves with learners' ability to find grammatical errors in their previously composed texts. This fact makes it impossible to claim that the two types of feedback have similar or different effects on learners' ability to carry out the entire editing process on their own, i.e., to examine a text that they have written, locate the structural errors and then correct them.

Second, the manner of counting errors in the Ferris et al. (2001) study gave equal weight to all errors. We know from previous studies that different types of errors may be easier or harder for students at different levels of proficiency to correct. Therefore, not giving weighted scores to different types of errors may make learners appear equal in their ability to correct errors where, in fact, the kinds of errors that one or the other is able to correct may be vastly different.

Third, the grammar knowledge test has some problems. For example, the error categories used in the grammar test do not correspond to those used in the text analysis. Also, in using this test, it was discovered that the grammar test contains some ambiguous questions which require a high level of linguistic knowledge to comprehend.

Fourth, there were some limitations found while conducting this study. First, the teacher effect might be a possible extraneous variable as data was collected from 12

different classes from levels 3 to 5 at Brigham Young University's ELC. Even though clear instruction was provided to each classroom teacher, some teachers may have given more in-depth explanations as to how to do the self-correction task than other teachers. This may have influenced students' success on a self-correction task.

Finally, students' lack of training regarding self-correction techniques might affect their abilities to correct grammatical errors in their writing. Whether or not the participants had previous training in self-correction was not examined in this study.

Suggestions for Further Research

The results of this study may be applicable to adult, international ESL students who are attending writing classes of intensive English programs in the United States. It may also be applicable to EFL learners. However, the findings of this study cannot apply to ESL children and immigrant students because these learners have different characteristics and needs concerning accuracy in writing. Further research examining those populations needs to be done.

The findings of the present study do not indicate long-term effects of teacher feedback on students' self-correction. To resolve this issue, a longitudinal study needs to be designed including multiple essays as data over a longer period of time. In this way, the effects of different kinds of feedback on students' long-term interlanguage development can be examined. Also, it would be possible to determine why students incorrectly use certain grammatical features. An analysis from multiple drafts enables researchers to distinguish errors from mistakes.

The results of the present study indicated that coding did not help the students' self-correction ability. However, providing codes might have a different effect on

students' ability to correct grammatical errors depending on their proficiency level and the types of errors that they make. That is, coding might be more beneficial to low proficient learners than advanced students. Also, it may have more impact on correcting difficult errors than on correcting low-level errors that students readily fix independently. Further research needs to investigate this issue.

A final suggestion is that further researchers need to clearly distinguish between self-correction and self-editing when designing their studies. Furthermore, coded feedback might have a different effect on students' self-editing than on self-correction. Therefore, this issue should also be examined in further studies.

Conclusion

There are some defensible explanations to support error feedback in writing. Some researchers argue that error feedback does not help students develop grammatical accuracy in writing (Truscott, 1996). This view seems to be premature because most of the studies were cross-sectional in nature, so it is not possible to ensure whether grammar feedback aids students' long-term development of accuracy. It takes a substantial amount of time for learners to internalize the forms of language. Therefore, it cannot be assumed that teacher error feedback is not worthwhile to implement based on results of short-term experimental studies. Furthermore, teacher error feedback might have a delayed effect depending on students' developmental stages of interlanguage.

When discussing the effects of error feedback in writing, researchers need to clarify which learners they are talking about and what stage of writing they are dealing with. Error feedback benefits adult learners more than children. In general, adults are more concerned about accurate production of language than children as Ellis (1994)

pointed out. As shown in the results of this study, the majority of the students revealed relatively high concern about grammatical accuracy, believing errors hurt their writing.

Error feedback seems to have the strongest effect in the editing phase rather than in composing and revising as shown in the findings of the study which corresponds to the literature (Fathman et al., 1990; Ferris et al., 2001; Makono, 1993).

Also, error feedback does have different effects depending on how it is implemented. When treating grammatical errors, indirect methods are preferred since this leads students to detect and self-correct grammatical errors. This self-discovery approach has an important pedagogical implication because it raises learners' consciousness about forms, which is believed beneficial for learners to acquire language as Makino (1993) noted.

In conclusion, the findings of this study support the claim that error feedback helps ESL international students self-correct grammatical errors. With regard to the level of explicitness, the non-coded feedback showed an equal effect as that of coded feedback. However, the findings of the experimental study did not determine whether coded feedback had a delayed effect or assisted students' long-term development of accuracy (Ferris, 2002). Finally, this study raises the issue of how to balance effective feedback with students' desires by showing the discrepancy between the results of the experimental study and the survey examining students' opinions regarding error feedback.

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Appendix A**APPROVED** **EXPIRES**
SEP 08 2003 - SEP 07 2004

INFORMED CONSENT

Error Feedback on ESL Writing

You are invited to participate in the research project entitled “The Influence of the Level of Explicitness of Indirect Error Feedback on ESL Students’ Self-Editing Ability.” The purpose of this research is to better find ways to respond to students’ grammatical errors.

The project will take about one hour to complete. First, you will complete a written grammar knowledge test and a questionnaire for 40 minutes. You will then be asked to edit a diagnostic essay that you already will have written during the first day of the class.

There are minimal risks such as discomfort from being tested associated with participating in this research project. A break will be provided during the testing session. However, if you ever feel uncomfortable during the testing session, you can take a break at any time. Your participation in this research project is voluntary and you are free to withdraw from participating in this project at any time. You may choose not to participate and non-participation will not affect your grade or standing in your class.

No direct benefits are associated with this project. However, the results of this project will include a better understanding of how different types of error feedback help ESL students edit their own errors in writing.

Your performance in this research project will be kept completely confidential, and any publication or presentations of the results of this project will include only information about group performance. All information from this study will be reported as group data with no references to names.

You may contact the researcher Youngju Hong (801-371-2715, hong@byu.edu) if you have questions concerning this project or you may contact Dr. Shane Schulthies (Chair of the Institutional Review Board, 120B RB, Brigham Young University, Provo, Utah 84602; phone, 801-422-5490) if you have questions that you feel you cannot ask the researcher.

I have read and understand the above, and I voluntarily agree to participate in this research project. I understand that I may keep a copy of this form.

 Signature

 Date

 Signature of investigator

 Date

Appendix B

Grammar Knowledge Test⁵

Name: _____ Level: _____

A. Each of the sentences below has an error in it. Using the terms from the **KEY** below, match the error type with each sentence. [Each sentence has only one error, and you will not use any error type more than once.]

Error Type Key:

1. Noun ending (plural or possessive missing or wrong)
2. Article or determiner missing or wrong
3. Verb tense wrong
4. Verb form wrong
5. Wrong word
6. Sentence structure error

1. _____ I didn't buy the car because I didn't wanted to spend so much money.
2. _____ We all rushed to help because my uncles house was on fire.
3. _____ I didn't worry about my English. Now, I understood how important it is.
4. _____ I looked at all of the cars and picked up the one I wanted.
5. _____ For immigrants there always something that makes them live unhappily in this country.
6. _____ When you are student, you always have to study hard.

B. In the student essay excerpt below, there are six errors marked. Using the same **KEY** that you used for **Part A** above, identify each error type and suggest a correction.

"College Pressures"

I need to disagree with Zinsser when he states, "professors who actually like to spend time with students don't have much time to spend." I **noticed** that most professors try to spend as much time as possible with their students. I have seen many **professor** who sometimes are willing to stay half an hour after the class is over to explain to students any misunderstanding they might have **on** the material the professor is teaching. When I think of peer pressure I see it more as an encouragement for me to succeed in a class. But Zinsser states peer pressure is a disadvantage to a student. I disagree with him completely. When one of my peers receives a higher grade than I do most of the time it does not make me feel jealous or feel **pressure, instead** it makes me understand that if I try just a little harder that I could do just as well as the other students. **Most of friends** who I have classes with never **have rub** in my face that they did better than me.

⁵ I acknowledge Dana Ferris for the use of her instruments in the present study.

Appendix C Grammar Knowledge Questionnaire

Name: _____ Level: _____

1. In English classes you have taken before, have you ever learned any English grammar rules or terms (noun, verb, preposition, etc.)? Choose **ONE** answer.

- Yes, a lot Sometimes Very little, or never Not sure

2. Has an English teacher ever told you that you have problems with any grammar rules?

Please choose any specific problems that a teacher has told you about.

- None Nouns-plural endings Articles Verb tenses
 Verb forms Subject-verb agreement Word choice Sentence structure

3. In your own opinion, what problems do you have with using English grammar in your writing? Choose all problems that you think you have.

- None Nouns-plural endings Articles Verb tenses
 Verb forms Subject-verb agreement Word choice Sentence structure
 Don't know

4. Please choose **ONE** statement which BEST describes how you feel about your English grammar.

- My English grammar problems are very serious and really hurt my writing.
 Although I don't know much about English grammar, it's not a serious problem for me.
 English grammar is not really a serious issue for me. Other writing issues are important.
 I'm not really sure whether English grammar is a problem for my writing.

5. In your opinion, what is the best way for me to give feedback about your grammar errors in your writing? Please choose **ONE** statement only.

- Don't correct my grammar. Let me try to correct my errors myself.
 Only correct the most serious errors.
 Circle my errors, but don't correct them for me.
 Circle my errors and tell me what type of error it is (verb tense, word choice, etc.).
 Correct all of my errors for me.

Appendix D

Survey of Student Reactions to Error Feedback (N=118)

Question	Frequency	Percent
1. Prior grammar instruction		
A lot	57	48.3%
Sometimes	45	38.2%
Very little	13	11.0%
Never	3	2.5%
2. Types of grammar problems identified by teachers		
Verbs		
Yes	42	35.6%
No	76	64.4%
Noun endings		
Yes	18	15.3%
No	100	84.7%
Articles		
Yes	53	44.9%
No	65	55.1%
Wrong word		
Yes	54	45.8%
No	64	54.2%
Sentence structure		
Yes	40	33.9%
No	78	66.1%
3. Types of grammar problems self-identified		
Verbs		
Yes	73	61.9%
No	45	38.1%
Noun endings		
Yes	28	23.7%
No	90	76.3%
Articles		

Yes	62	52.5%
No	56	47.5%
Wrong word		
Yes	65	55.1%
No	53	44.9%
Sentence structure		
Yes	74	62.7%
No	43	36.3%
4. Seriousness of grammar		
Serious	52	44.1%
Not serious	34	28.8%
Other issues more important	24	20.3%
Not sure	8	6.8%
5. Error feedback preference		
Don't correct	5	4.2%
Correct most serious	3	2.5%
Circle errors	22	18.7%
Circle & label error type	63	53.4%
Correct all errors	25	21.2%
6. How much do you enjoy writing in English?		
5 (Very much)	30	25.4%
4	37	31.4%
3	31	26.3%
2	15	12.7%
1 (Very little)	5	4.2%
7. How much concern do you have about grammatical accuracy?		
5 (Very much)	44	37.3%
4	32	27.1%
3	30	25.4%
2	7	6.0%
1 (Very little)	5	4.2%

Appendix E

Background Information of Participants

Please, give as much information as you can (It will be kept completely confidential).

1. Name: _____ Level: _____
2. Date of Birth: _____ (ex. 09/25/1981)
3. Gender: M F
4. Nationality: _____ Native Language: _____
5. Are you an international student with an F1 Visa? Yes No
6. Have you ever lived in an English speaking country before? Yes No
If you answered Yes, where and how long did you live there?
Where: _____ Length of stay: _____ Year(s) _____ Month(s)
7. How long have you been here in the United States? _____ Year(s) _____ Month(s)
8. Are you now attending or have you previously attended college? Yes No
9. When you started to study English, how old were you? _____ (ex. 14 years old)
10. How long have you studied English before you came to the USA?
_____ Year(s) _____ Month(s)
11. Where did you learn English?
 Formal Instruction Exposure to English Speaking Environment Self-taught
(In school or institute)

12-14. Circle ONE answers.	Very much			Very little	
12. How much do you enjoy studying English?	5	4	3	2	1
13. How much do you enjoy writing in English?	5	4	3	2	1
14. How much concern do you have about grammatical accuracy?	5	4	3	2	1

15. When did you start to study at the ELC? _____ (ex. Winter, 2002)
16. When you studied English in your home country, which skill did you study the most?
(Put #1 beside the skill that you studied most, #6 beside the one you studied least, and put
the other numbers in order from most to least)
____ Grammar ____ Reading ____ Vocabulary ____ Writing ____ Speaking ____ Listening
17. Now which skill do you feel the most competent?
(Put # 1 beside the skill that you feel the most competent, #6 beside the one you feel the
least, and put the other numbers in order from most to least)
____ Grammar ____ Reading ____ Vocabulary ____ Writing ____ Speaking ____ Listening

Appendix F

Writing Diagnostic Test-- Fall 2003

Level 3

Topic: If you could change one important thing about your hometown, what would you change? Why? (You will have 30 minutes to write an essay.)

Level 4

Topic: The expression "Never, never give up" means to keep trying and never stop working for your goals. Do you agree or disagree with this statement? Use specific reasons and examples to support your answer. (You will have 30 minutes to write an essay.)

Level 5

Topic: Many people visit museums when they travel to new places. Why do you think people visit museums? Use specific reasons and examples to support your answer. (You will have 30 minutes to write an essay.)

Appendix G

Diagnostic Essay Editing Exercise

GROUP 1

Teacher feedback on your grammar errors: correction codes

To the students: Using the codes listed below, I have marked errors in the five categories listed. Please go through your paper and try to make as many corrections as you can, using the codes to help you understand what the error is. You will have 20 minutes to make the change. Please write changes either under the word(s) or in the margins. Please write as clearly as you can.

Code	Meaning
V	error in verb tense or form
NE	noun ending (plural or possessive) missing or unnecessary
Art	article or other determiner missing or unnecessary or incorrectly used
WW	wrong word or word form
SS	sentence structure: missing or unnecessary words; wrong word order; run-ons and sentence fragments

GROUP 2

Instructions: Please carefully reread the diagnostic essay you wrote in class and typed one (attached). I have marked errors that I have found. Please try to correct them. If you find any other errors that I have not marked, you may correct those as well. You will have 20 minutes to make the change. Please write changes either under the word(s) or in the margins. Please write as clearly as you can.

GROUP 3

Instructions: Please carefully reread the diagnostic essay you wrote in class and typed one (attached). If you find any errors in grammar, spelling, word choice, or punctuation, please correct them. You will have 20 minutes to make the change. Please write changes either under the word(s) or in the margins. Please write as clearly as you can.

Appendix H

Descriptions of Students by Level

Level 1 (Can see tall buildings)

- Able to operate only in a very limited capacity within predictable areas of elementary need
- Can express basic formulas and expressions
- Able to ask and answer simple questions with incomplete structure (one or two-word responses)
- Almost every utterance contains fractured syntax or other grammatical errors
- Interference in articulation, stress, and intonation
- Frequent misunderstandings due to limited vocabulary and skill in grammar and pronunciation

Level 2 (Can run towards tall buildings)

- Able to satisfy basic survival needs and minimum courtesy requirements
- Can ask and answer simple questions concerning very familiar topics
- Can initiate and respond to simple statements
- Can give narration in simple present and past tenses, but with many errors and uncertainty
- Can maintain very simple face-to-face conversations
- Able to formulate some questions with limited constructions and much inaccuracy
- Vocabulary inadequate to express anything but the most elementary needs
- Misunderstandings due to mispronunciation, but with repetition, can generally be understood by patient native speakers

Level 3 (Can open doors of tall buildings)

- Able to satisfy some survival needs and some social demands
- Some evidence of grammatical constructions such as subject-verb agreement
- Vocabulary permits discussion of topics beyond basic survival such as personal history and leisure time
- Able to formulate DO questions, but with a some errors
- Able to use simple present, past, and future tenses with only a few errors

Level 4 (Can enter tall buildings)

- Able to satisfy most survival needs and social demands
- Developing flexibility in a range of circumstances beyond immediate survival needs
- Spontaneity in language production but fluency is uneven
- Can initiate and sustain a general conversation
- Able to use simple past, present, and future tenses with very few errors
- Shows limited knowledge of perfect tenses, but with frequent errors
- Can use most question forms including some modals
- Pronunciation comprehensible to native speakers who are used to dealing with foreigners

Level 5 (Can walk through tall buildings and get to the back door)

- Able to handle most social situations including introductions
- Able to carry on a casual conversation about current events, work, family, and autobiographical information
- Has a speaking vocabulary sufficient to handle most questions
- Can use simple tenses with accuracy
- Can use perfect tenses with limited accuracy
- Pronunciation understandable to most native speakers, but occasional repetition may be necessary
- Can use modals in questions, statements, and in giving responses with limited accuracy

Level 6 (Can jump tall buildings)

- Can handle most social situations with confidence
- Can handle some formal situations with confidence
- Can describe an event in the past or give details about future events or plans
- Able to support an opinion and begin to discuss abstract concepts
- Can handle quite sophisticated constructions, but still makes minor errors that don't inhibit communication
- Can be understood by any English speaker
- Can use conditionals with limited accuracy

Note. From <http://humanities.byu.edu/elc/teacher/ELCLevels>