Learner Understanding of Written Corrective Feedback and Its Relationship with Immediate Uptake and Retention in EFL Classrooms*

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Despite a growing interest in the role of written corrective feedback (CF) in L2 development, not enough research has examined how learners actually process and understand linguistic information delivered in CF. Acknowledging the importance and necessity of process-oriented research into written CF, the present study investigated the extent to which Korean learners of English understood written CF they received from the teacher in writing classes. In addition, the study looked into whether the presence and quality of understanding of CF was related to learners’ immediate uptake and retention of CF. Two intact writing classes and one native English teacher participated in the present research. The study found that a third of CF targeting grammar errors and a half of CF targeting vocabulary errors were correctly understood. The quality of the learners’ understanding of CF was closely related to their immediate uptake in terms of grammar but not in vocabulary; and the quality of their understanding was strongly related to retention in grammar and vocabulary.

Key words: written corrective feedback, learner processing of feedback, uptake, retention

1. INTRODUCTION

The role of written corrective feedback (CF) in second language (L2) learning has recently received much attention from second language acquisition (SLA) researchers (Bitchener & Ferris, 2012). However, it is only recently that it became a matter of interest.

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in the field of SLA. Considering the fact that written CF is one of the most prevalent pedagogical interventions employed in L2 classrooms, this comes as a considerable surprise. It is likely to be true that Truscott’s (1996) call for abandoning written CF triggered SLA researchers to examine its effects on L2 learning, although the evidence Truscott cited to support his argument was being challenged (Ferris, 1999, 2004).

While pre-Truscott research into written CF focused on learners’ use of CF in the process of revision, recent research has made an attempt to experimentally investigate the direct effects of written CF on L2 accuracy development (Ferris, 2004). Researchers have particularly attended to (a) whether certain types of CF are more effective than others (Bitchener, 2008; Hartshorn, Evans, Merrill, Sudweeks, Strong-Krase, & Anderson, 2010; Robb, Ross, & Shortreed, 1986; van Beuningen, De Jong, & Kuiken, 2008, 2012) and (b) whether CF is more useful for treating some linguistic errors than others (Bitchener, 2008; Bitchener, Young, & Cameron, 2005; Ellis, Sheen, Murakami, & Takashima, 2008). In doing so, most studies have investigated the effects of written CF on L2 learning in laboratory settings when it targets a predetermined linguistic feature. This controlled experimental research provides us with reliable information regarding the usefulness of CF in certain conditions. However, questions have also arisen regarding whether the findings from these studies can be applicable to intact classrooms where teachers provide CF to a range of learner errors (Bruton, 2009; Kim, 2010; van Beuningen, 2010). In addition, most previous written CF studies are outcome-oriented. In other words, they focus on the effectiveness of CF on developing L2 accuracy, but not on learners’ actual processing of CF and its relation to learning outcome. Learner processing of written CF has been overlooked. However, recently, some have pointed out that examining how learners actually process and use CF could provide insights into how and when learners benefit from CF (Storch, 2010; Storch & Wigglesworth, 2010; van Beuningen, 2010). Therefore, the present study aims to investigate how learners understand written CF provided in intact L2 composition classes and their immediate and delayed use of linguistic information delivered via CF. To this end, the paper will first review previous research into written CF and present research methods, followed by results and discussion.

2. LITERATURE REVIEW

2.1. L2 Research into the Effectiveness of Teacher Written CF

As noted above, researchers have particularly attended to the relative effects of written CF according to types of feedback. The types of written CF can be categorized by the degree of explicitness created a) by the narrowness of treated linguistic errors (focused vs. 
unfocused CF) and b) by the types of feedback provision (direct vs. indirect CF).

2.1.1. Focused vs. unfocused CF

The focused-unfocused dichotomy refers to the extent of learner errors that CF addresses. Focused CF targets a very limited range of learner errors which are predetermined, and errors outside the focus domain are left uncorrected. Unfocused CF, on the other hand, targets all learner errors. Some researchers tested out the relative effectiveness of focused-unfocused written CF and reported that learners benefited more from focused CF than unfocused CF. Ellis et al. (2008), for instance, compared the effectiveness of focused and unfocused written CF provided to intermediate EFL on accuracy development of two specific functions of English articles (i.e., “a” for first mention and “the” for anaphoric reference). They found that the focused group outperformed the unfocused group. The same result was reported by Bitchener (2008). Those who support focused CF argued that there are theoretical reasons which explain the advantages of focused CF over unfocused CF for accuracy improvement (Bitchener, 2008; Sheen, 2007). They noted that learners are more likely to notice CF when it targets a specific error, and such noticing is a catalyst for L2 development (Schmidt, 1990, 2001). In addition, they stated that unfocused CF may not successfully lead learners to notice and understand errors since they may be cognitively overwhelmed by dealing with CF, which targets a range of linguistic features.

The findings from focused CF research, however, have been questioned. First, Bruton (2009) pointed out that feedback in focused CF studies serves rather as a form of explicit grammar instruction than a focus-on-form intervention. More specifically, in these studies, writing is not a means of communication but a medium to elicit the use of certain predetermined linguistic features. When learners make an error related to the targeted linguistic features, CF is intensively provided for the error. This condition appears similarly when learners acquire a language form in an isolated context, possibly making it difficult for learners to transfer what is learned from the feedback to new writing (Segalowitz, 2000). Furthermore, practically, in real classrooms, teachers provide unfocused CF (i.e., comprehensive CF), since the purpose of CF is improving accuracy in general, not just the use of a couple of linguistic features (Ferris, 2010). When we consider the differences between written CF provided in focused CF research and the one in intact classrooms, it is difficult to apply the findings of unfocused CF studies to real classrooms.

2.1.2. Direct vs. indirect CF

Direct written CF has been defined as feedback that provides explicit correction to errors. This can be done in numerous ways: crossing out an unnecessary word or phrase, inserting
an omitted word, offering a correct form, and/or providing metalinguistic explanation. On the other hand, indirect written CF has been defined as feedback that points out—for instance by underlining or circling errors and using a code to show the category error—without providing the correct form.

Theoretical arguments concerning the relative effectiveness of direct and indirect CF have been advanced. Arguments in support of indirect CF suggest that learners will benefit more from indirect CF since it “requires pupils to engage in guided learning and problem solving, as a result, promotes the type of reflection that is more likely to foster long-term acquisition” (Bitchener & Knoch, 2008, p. 415). Those supporting direct written CF argue that indirect CF might not provide sufficient information for learners to resolve linguistic errors. Chandler (2003) pointed out that direct CF enables learners to immediately internalize the correct form, while learners whose errors are corrected indirectly do not know whether their own corrections are accurate. This delay in access to the correct form might weaken the potential advantage associated with indirect CF.

As the theoretical arguments over the effects of direct and indirect CF on L2 learning are still in progress, indeed, empirical evidence which clearly shows the advantage of one approach over the other is lacking. Lalande (1982), for instance, reported that indirect feedback (coding) was more effective than direct error correction for 60 intermediate German foreign language learners, but the group difference was not statistically significant. A similar result was reported by two different studies, Semke (1984) and Robb et al. (1986), which examined the relative effects of four different types of feedback. Semke’s (1984) study of 141 German FL learners compared the relative effectiveness of four types of feedback—direct error correction, content comments, direct error correction + content comments, and indirect coding, but no difference was found. Robb et al. (1986) also found no difference in the effectiveness of four different types of feedback (direct error correction, indirect coding, indirect highlighting, and indirect marginal error counts) with 134 EFL learners in Japan.

There are three recent studies which, unlike the aforementioned studies, found direct written CF to be more effective than indirect written CF. These two studies by van Beuningen et al. (2008, 2012), in which learners of Dutch in the Netherlands participated, found that both direct and indirect written CF were effective, but direct CF had a longer-term effect. Their finding is corroborated by Bitchener and Knoch’s (2010a) research with ESL learners in the US. In support of direct CF, some researchers investigated the relative effectiveness of different types of direct written CF on improved accuracy. While some studies found direct CF with metalinguistic explanation beneficial (Bitchener et al., 2005; Sheen, 2007), others reported no difference between different types of direct CF (Bitchener & Knoch, 2008, 2010b).

As noted above, research into the effectiveness of CF on L2 accuracy development has
reported conflicting and inconclusive findings. The majority of these written CF studies investigated the effectiveness of CF through an outcome-oriented approach (i.e., focusing only on whether learner accuracy shows any improvement, using pre-posttests). Such an approach might be limited to account for the selective effects of CF that have been reported to date. As Storch and Wigglesworth (2010) pointed out, more process-oriented studies need to be conducted to deepen our understanding of how learners actually use the linguistic information CF provides, and this may in turn lead us to understand when and how learners most take advantage of written CF. This issue related to learner understanding of CF will be further discussed in the following section.

2.2. Learner Understanding of Teacher Written CF

The advantage of CF over positive evidence is that CF leads to learner noticing of linguistic problems (Long, 1996). According to Schmidt (2001), noticing is the conscious perception of “the surface structure of utterances in the input—instances of language, rather than any abstract rules or principles of which such instances may be exemplars” (p. 5). In addition, what is noticed is “not just the raw data of the input” but “input as interpreted by existing schemata” (p. 30). Schmidt (1990, 2001) also differentiates noticing from understanding, which is the conscious perception of abstract rules. In other words, noticing is interpreted as the surface level of conscious perception, whereas understanding is a deeper level of conscious processing. He claims that awareness at the level of noticing is required for SLA, while awareness at the level of understanding is facilitative of SLA, but not required. Yet although the level of understanding is not required, the positive relationship between the level of awareness and L2 learning has been addressed in many studies (Leow, 2001; Rosa & Leow, 2004).

The question that comes next, logically, is whether CF actually promotes learner noticing and further understanding of the linguistic problems it targets. This question has often been tested out in the field of oral CF, and many studies reported a mismatch between learner understanding and teacher intent (Egi, 2007; Kim & Han, 2007; Mackey, Gass, & McDonough, 2000). However, little written CF research has looked into how learners actually notice and process it. This lack of interest in learners’ processing might be due to our assumption that they may easily notice CF since it is provided in written form, unlike oral CF. For the direct CF, noticing seems to be especially considered guaranteed. Noticing of CF, however, does not guarantee learners’ accurate interpretation of teacher CF. For instance, Han (2001) in her longitudinal case study found that a learner’s persistent errors, notwithstanding a teacher’s consistent error correction (mostly written CF), was attributed to her misinterpretation of CF. Through the interview, it was found that the learner noticed CF, but her L1 misguided her interpretation of the teacher’s intended meaning and the
nature of the errors. As Han’s (2001) study shows, it may be naive to assume that learners will be able to notice written CF, and that this will lead to correct understanding of the errors.

The level of learner noticing and understanding of CF is critical to shape its effectiveness (Carroll, 2000), and this has been proved in a couple of written CF studies. Qi and Lapkin (2001) investigated the effect of depth of processing on the effectiveness of feedback. Learners’ noticing of the received written CF (reformulation) was measured by think-aloud protocols, and their verbal data were classified into two types of noticing: substantive and perfunctory. Perfunctory noticing referred to the cases where the learners simply mentioned that the CF was given. On the other hand, substantive noticing included the cases in which the learners articulated reasons for the feedback received, and this was considered as evidence that the learners understood why the CF was provided. Qi and Lapkin reported that substantive noticing led to greater improvements in the revised text than perfunctory noticing. A similar result was found in Sachs and Polio (2007): when learners understood the reason why CF was given, they were more likely to revise the item on subsequent drafts. However, the data in both studies were collected in a laboratory setting, not in an intact classroom setting. Given that the relationship between learners and teachers may affect learners’ acceptance of CF (Given & Schallert, 2008), it might not be possible to expect the same results in intact classrooms. Both studies focused on learners’ immediate use of CF in revising the text, but not in a new text. This makes it difficult to make claims for the effectiveness of CF in L2 development.

Acknowledging the necessity of investigation into learner understanding of written CF and its relationship with L2 development and the gaps in the previous literature, the present study set out to examine the extent to which learners understand written direct CF (i.e., comprehensive CF), and the relations between the quality of understanding and their immediate uptake of it. Moreover, it investigated their use of CF in writing a new text. Considering the findings that learner noticing has to do with language aspects CF targets from oral CF research2 (Kim & Han, 2007; Mackey et al., 2000), different language aspects (grammar and vocabulary) were considered in the analysis of data. The detailed research questions are as follows:

1. To what extent do learners understand teacher written direct CF to grammar and vocabulary errors?
2. Is learners’ understanding of CF related to their immediate uptake of it? If so, is its relationship different according to linguistic features?

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2 Oral CF studies into learner perception have found that learners tend to pay more attention to CF targeting lexical items than grammatical items.
3. Is learners’ quality of understanding of CF related to their use of it in writing a new text? If so, is its relationship different according to linguistic features?

3. METHOD

3.1. Participants

The participants in this study were 32 Korean EFL university students in various majors who attended an intensive English program offered by a university (Class A: 17; Class B: 15). The program was designed to develop four English language skills (speaking, listening, reading, and writing), and each skill was taught for one hour everyday throughout four weeks during a winter vacation. The participants (24 female and 8 male students) were enrolled in two intermediate classes. They had been placed in the classes according to their TOEIC scores. The mean score was 625. The data were collected from their writing classes.

One teacher taught the students writing. He was an American teacher who held an MA in TESOL and 8 years of EFL teaching experience. He usually provided direct written CF without any metalinguistic comments most of time when he provided correction, but used indirect CF if necessary. He was specifically asked to use only the direct CF for the present research. There are two reasons why direct CF was chosen. First, as noted before, it was the teacher’s primary feedback strategy in the writing mass, so it was assumed that using direct CF could create more authentic conditions, which the present research considered important. In addition, it aimed to test out our supposition that learners would not experience problems understanding written direct CF, since it is clearly noticeable and provides correct models.

3.2. Procedures

The learners were asked to engage in four stages: a composition stage, a feedback reflection stage, a revision stage, and a rewriting stage (see Figure 1). For the first stage, students were asked to write a story based on a picture prompt, consisting of 18 strips (see Appendix). The picture prompt was chosen because it was a feasible way to elicit learners’ written productions. They were asked to write at least one sentence for each strip for 30 minutes. The teacher provided direct written CF for all of the errors the students made (i.e., comprehensive errors). After the teacher provided CF, all of the students’ writings were photocopied along with the teacher’s corrections.
A day after, for the second stage, each learner met the researcher or a trained research assistant for an interview. During the interview, the learners were given opportunities to reflect on the CF the teacher provided. Then they were asked to verbalize how they processed and understood each correction in their writings. In order to help familiarize them with this stage, before they reflected on their own writings, they practiced verbal reports with a sample paragraph the researcher prepared. When the learners felt ready, they were given their own writing. The interview was conducted in Korean and it was audio-taped.

Two days after the first stage, the learners participated in the revision stage. They received their initial writing, which was retyped without the teacher’s CF, and they were asked to correct whatever they thought incorrect for the twenty minutes that were allotted. Then two weeks later, the learners engaged in the rewriting stage. They were provided the same picture prompt they used in the first composition stage and were asked to repeat the same task—writing a story based on the pictures in 30 minutes. The students were not informed that they would be asked to revise and rewrite the story in advance.

3.3. Coding

3.3.1. Students’ original writing and teacher CF

The teacher’s CF was coded according to whether it targeted grammar or vocabulary. Other corrections (e.g., punctuation) were excluded from data coding.

3.3.2. Verbal reports: Measuring learner understanding

The students’ verbal reports collected from the interview were analyzed by a two-tiered system. Since the present research focused on learner understanding of teacher CF targeted
to grammar and vocabulary, only the students’ reports related to error correction of these aspects were analyzed, although they were allowed to report on whatever they desired. In the first tier of the system, verbal reports were classified according to whether the students showed awareness at the level of understanding (+) U or not (-) U, regardless of whether their understanding was correct. In the present study, understanding was operationalized as the students’ comments or explanations of error correction as seen in Example (1) and (2). Then in the second tier of the system, the instances of (+) U were coded as CU or ICU according to whether the students’ comments or explanations were correct, as in Examples (3) and (4). All examples are from the present research.

(1) Example 1: (+) U

When he was walking home, he saw a car.

_Student’s (S) verbal comments_: I do not need “to” here because of “home.” I say “go home” not “go to home.”

In Example [1], the student understands “home” does not take “to” here.

(2) Example 2: (-) U

The man would drown.

_S’ verbal comments_: Well, I think I need to use the passive voice. “Ink-sa-dang-ha-da” (in Korean)... Hmm... I don’t know why not passive form.

In Example [2], she does not understand why the verb “drown” is not used in the passive form.

(3) Example 3: CU

He is an extremely normal person.

_S’ verbal comments_: Yes, I need “a” here and because of the sound of “e,” actually “an” is correct form. This is my first sentence. I need “a” to mention “this boy.”

3 Since CF was provided in a direct manner, the learners’ cognitive processing at the level of noticing was not considered in the present research.
In this example, the student correctly understands why “an” is required.

(4) Example 4: ICU

She was driving her car at the right speed.

S’verbal comments: “the” not “a,” “okay, the speed was first mentioned.”

In Example [4], the student reasons why “the” is required, but her explanation is not correct.

3.3.3. Students’ revision: Learner uptake of CF

The students were provided their retyped original stories without the teacher’s CF and were asked to correct the errors. In this stage, the study examined whether the errors they initially made were corrected, (+) C, or not, (-) C. The learners’ verbal reports and revisions were compared in order to investigate the relationship between their understanding of CF and immediate uptake in the revision stage. The cases where they attempted to correct initial errors without success were coded as (-) C.

3.3.4. Students’ rewriting

Two weeks later, the students were given the same picture prompt they used in the first composition stage. There was no guarantee that the students would use the same language structures or features and vocabulary they used in the first stage. Since the present research aimed to examine the relationship between the quality of learners’ understanding (CU/ICU) and their use of CF in a new text, we first examined whether the learners used the language structure or features and vocabulary previously coded as CU and ICU in a new text. Then we examined whether they correctly used these features and vocabulary.

The relationships between learner understanding of CF and immediate uptake and retention were examined through a Pearson’s Chi-square analysis, since the data consisted of raw frequencies (Mendenhall, Beaver, & Beaver, 2002). An alpha level of $p < .05$ was set for the analyses. In order to establish the reliability of coding, 25% of the data were coded by an independent rater who holds an MA degree in TESOL and is fluent both in Korean and English. We found a 94.67% level of agreement in the types of teacher feedback, 90.21% in learner understanding, and 93.54% in learner uptake, which were considered highly reliable (Mendenhall et al., 2002).
4. RESULTS

4.1. Learner Understanding of Teacher CF

In order to investigate the extent to which the learners showed their understanding of CF, their verbal reports were compared with the teacher's CF. As noted previously, whether the learners had an accurate understanding of CF was not considered this time. As demonstrated in Table 1, the learners received 288 CF to grammar. Among these corrections, they showed understanding of 157 corrections (54.51%). With respect to CF to vocabulary, out of 193 corrections, 133 (68.91%) corrections were understood. A chi-square test proved that the degree of understanding itself was related to the language aspects ($\chi^2 = 10.006$, $df = 1$, $p = .002$, $\phi = -.114$), suggesting that the learners tended to more frequently understand CF aimed at vocabulary than at grammar.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Learner Understanding of CF</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Grammar</td>
</tr>
<tr>
<td>(+) U</td>
<td>157 (54.51%)</td>
</tr>
<tr>
<td>(-) U</td>
<td>131 (45.49%)</td>
</tr>
<tr>
<td>Total</td>
<td>288</td>
</tr>
</tbody>
</table>

Then the learners' verbal reports were further analyzed according to the correctness of their understanding of CF (CU/ICU). As in Table 2, for grammar CF, among 157 cases of (+) U, 104 (66.42%) cases were CU, and 53 (33.76%) were ICU. In the cases of CF to vocabulary, 98 out of 133 (73.68%) instances of (+) U were CU and 35 (26.32%) were ICU. As noted above, when only (+/-) U was measured, language aspects were related to the degree of understanding. However, when the quality of understanding (CU/ICU) was examined, there was no relationship to the aspects of languages ($\chi^2 = 1.887$, $df = 1$, $p = .200$, $\phi = -.081$), indicating that the number of cases of CU/ICU was not different across the targeted language aspects, grammar and vocabulary.

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Quality of Learner Understanding of CF by Correctness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grammar</td>
</tr>
<tr>
<td>CU</td>
<td>104 (66.24%)</td>
</tr>
<tr>
<td>ICU</td>
<td>53 (33.76%)</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
</tr>
</tbody>
</table>
When the extent to which the students showed CU regarding all CF was calculated, they showed CU 36.11% of the time (104 out of 288) for grammar items and 50.78% of the time (98 out of 193) for vocabulary items.

4.2. Relation Between Learner Understanding and Uptake of CF

Considered was the relationship between the presence of the learners’ understanding of CF and their immediate uptake, as shown in Table 3. In the category of grammar CF, they corrected 93 errors out of 157 (59.24%) when they showed some degree of understanding, (+) U, while they corrected 42 errors out of 131 (32.06%) when they showed no evidence of understanding, (-) U. Regarding learner understanding of vocabulary CF, 70 errors out of 133 (52.63%) were corrected when the learners exhibited (+) U, while 28 errors out of 60 (46.67%) were corrected without any degree of understanding, (-) U.

The percentage of corrections for (+) U and (-) U suggested that the learners more frequently used CF correctly when they had some degree of understanding of CF. However, a chi-square test showed interesting findings: with respect to grammar, (+/-) U, the presence of learner understanding of CF, was closely related to their immediate uptake ($\chi^2 = 21.177$, $df = 1$, $p = .000$, $phi = .271$); however, vocabulary CF understanding was not related to (+/-) U ($\chi^2 = .589$, $df = 1$, $p = .534$, $phi = .055$).

<table>
<thead>
<tr>
<th>Learner Understanding (+/-U) and Immediate Uptake of CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+U)                     (-U)</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Grammar</strong></td>
</tr>
<tr>
<td>(+) C</td>
</tr>
<tr>
<td>(-) C</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

The relationship between the learners’ understanding and immediate use of CF was further analyzed by scrutinizing the quality of understanding (CU/ICU). As shown in Table 4, for instances of CU, they were able to correct their 74 initial errors out of 104 (71.15%) in grammar, and 56 errors out of 98 (57.14%) in vocabulary. For ICU, they were able to correct 24 initial errors out of 53 (45.28%) for grammar and 16 out of 35 (45.71%) for vocabulary.
The relationship between the quality of understanding and immediate use of CF was tested via chi-square tests. The results revealed that the degree of successful immediate use of CF was highly related to the quality of understanding for grammar items \( \chi^2 = 18.122, df = 1, p = .000, \phi = .340 \), but not for vocabulary items \( \chi^2 = 3.040, df = 1, p = .114, \phi = .151 \).

4.3. Quality of Learner Understanding of CF and Retention

The rewriting stage was conducted to investigate the learners' retention of linguistic information delivered via CF. Table 5 shows that the learners used 126 grammar items in the rewriting stage which they used in the first stage, and among these, 88 cases were items for which they showed CU and 38 with ICU. When their correctness was analyzed, the learners' CU led the students to correctly use 69 out of 88 items (78.41%), while their ICU resulted in 14 correct uses out of 38 (36.84%). For vocabulary, the learners reused 107 items in their rewriting stage: 79 were the instances they showed CU, and 28 were ICU. Of 79 CU items, 58 cases (73.42%) were correctly used; 10 out of 28 (35.71%) were correctly used when they showed ICU. Chi-square tests showed the relationship between the learners' retention and the quality of understanding of CF for both grammar CF \( \chi^2 = 20.398, df = 1, p = .000, \phi = .402 \) and vocabulary CF \( \chi^2 = 12.687, df = 1, p = .001, \phi = .344 \).

The findings can be summarized as follows. The learners understood more than one-half of the teacher’s CF to both grammar and vocabulary. However, when the quality of understanding (CU/ICU) was considered, only a third of grammar CF was correctly understood. For vocabulary, the learners showed correct understanding of one-half of CF. In the relationship between the learners' understanding and their immediate uptake, there was a significant relationship between the two for grammar, but not for vocabulary. However, the study found that the quality of understanding of CF was related to the learners’ correct use in new texts in both grammar and vocabulary items.
TABLE 5

Quality of Learner Understanding and Retention of CF

<table>
<thead>
<tr>
<th></th>
<th>CU Grammar</th>
<th>CU Vocabulary</th>
<th>ICU Grammar</th>
<th>ICU Vocabulary</th>
<th>Sub-Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+) C</td>
<td>69</td>
<td>58</td>
<td>127</td>
<td>14</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>(78.41%)</td>
<td>(73.42%)</td>
<td>(36.84%)</td>
<td>(35.71%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(-) C</td>
<td>19</td>
<td>21</td>
<td>40</td>
<td>24</td>
<td>18</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>(21.59%)</td>
<td>(26.58%)</td>
<td>(63.16%)</td>
<td>(64.29%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>88</td>
<td>79</td>
<td>167</td>
<td>38</td>
<td>28</td>
<td>66</td>
</tr>
</tbody>
</table>

5. DISCUSSION

The present study found that the learners did not understand CF all the time even though CF was explicit; nearly half of CF was not understood by the learners. This shows that our assumption that the written CF will be easily understood since it is provided in written form is no more than a benign supposition. Written CF, especially direct CF, may be easily noticed; however, this does not mean that students undergo cognitive processing at the level of understanding. When the quality of understanding was considered, the result was more striking. For grammar CF, only a third of CF was correctly understood, and two thirds of it was not understood or the learners’ understanding was incorrect. This suggests that only a third of CF was processed in a form the learners could utilize for L2 learning (Schmidt, 2001). As Han (2001) pointed out, such misunderstanding not only renders CF ineffective but also eventually brings about fossilization.

For CF targeting vocabulary errors, the learners reported greater and better understanding. This suggested that the learners were more concerned with lexis than grammar as they processed the feedback. A similar finding was reported in Qi and Lapkin (2001). In their study, the language-related-episodes were employed to measure learner processing of written feedback (i.e., reformulation). The learners, regardless of different proficiency levels, talked more about lexical correction than grammar correction. This may be due to learners’ general tendency to pay attention to meaning over form when they process input (VanPatten, 2004). However, another explanation is possible: it might be an easier process for the learners to articulate the reason why they received CF targeting vocabulary items than grammar items, since the latter requires retrieving their prior knowledge of the rules in question, which demands a deeper level of processing (Robinson, 1995).

When it came to the relationship between the learners’ understanding of CF and their
immediate use, the presence and quality of understanding of CF was closely related to the learners’ uptake in the revision stage in the case of grammar CF. This suggested that learners’ processing of CF at the level of understanding seemed to make available a better chance to bring about L2 learning compared to the instances where CF was not understood. The importance of cognitive processing of input at the level of understanding has been reported in many studies which examined the relationship between the level of awareness and intake (Rosa & Leow, 2004; Rosa & O’Neill, 1999). For instance, Leow (2001) reported that learners who made comments on rules about the targeted L2 forms significantly outperformed learners who simply mentioned the forms. In a similar vein, Rosa and O’Neill (1999) found that verbalizations of a higher level of awareness with evidence of understanding were strongly associated with learner intake. Qi and Lapkin (2001) also emphasized the importance of noticing at the level of understanding in CF processing.

It must be pointed out that there were a number of cases where the learners failed to correct grammar errors in the revision stage, even though they reported their correct understanding of CF despite the strong relationship that exists between learner understanding and immediate uptake. This might be a sign of the need for reinforcement and a deeper level of rehearsal in memory (Robinson, 1995, 2003). For those uncorrected forms, it seemed that the deeper rehearsal processing which could lead the learners to store the information delivered in CF in their long-term memory was missing.

For vocabulary CF, interestingly, the presence and quality of the learners’ understanding of CF was not significantly associated with their immediate use of CF in the revision stage. While the students needed to retrieve the grammatical rule and integrated it into the new linguistic information delivered in CF (i.e., elaborative rehearsal) (Robinson, 1995, 2003), such a deeper level of processing was not required when the learners processed CF regarding vocabulary because vocabulary learning is item-based, not rule-governed (Doughty, 2003; Doughty & Williams, 1998). Put differently, the depth of understanding the learners went through in the process of vocabulary CF did not seem as deep as the one they exhibited in the process of grammar CF. Thus, the learners’ understanding of vocabulary did not make a significant difference in their immediate use of CF in the revision stage as it did with grammar.

However, the learners were more likely to produce correct forms which they initially used incorrectly in the first stage when they exhibited correct understanding compared to when they exhibited incorrect understanding of CF in both grammar and vocabulary. In other words, the quality of understanding was strongly related to the learners’ retention of the linguistic information delivered through CF, which emphasizes the significance of the learners’ correct understanding of CF in order for the feedback to be effective in L2 learning (Carroll, 2000; Han, 2001; Mackey, 2006; Sachs & Polio, 2007; Qi & Lapkin,
The present research also found evidence which supports the hypothesis that output triggers learner noticing (Izumi, 2003; Swain, 2005), even though this was not the focus of the present study. Consider the following verbal reports:

*The word “weight” was at the tip of my tongue. I remembered that someone used that word in a TV program. But, the word did not come to me. So I used “thing.” Yes, “a heavy weight” was the word I wanted to use.*

*Oh, “speedometer.” I realized that I did not know how to express “sok-do-gye” in English. I know sok-do. So I just wrote “speed.” I knew I was wrong. “Speedometer”—I guess “-meter” means “gye” in Korean.*

*I wanted to express a hypothetical situation. But, I was not sure how to construct the sentence. Now, I see. I was supposed to use “would.”*

In these verbal reports, the learners realized the lack of their interlanguage (i.e., noticing the gap or hole) in describing the pictures, which led them to actively engage in the process of CF. This finding corroborates the research findings which prove the facilitative role of output in prompting learner noticing in the processing of input (Izumi, 2002, 2003; Swain, 2005).

### 6. CONCLUSION

The present study found that written CF, even in a direct manner, did not always bring about the learners’ cognitive processing at the level of understanding in Schmidt’s (1990, 1995, 2001) terms. In addition, it found a strong relationship between the quality of the learners’ understanding of CF and their immediate uptake for CF targeting grammar errors. This leads us to reassert the importance of a deeper level of cognitive processing in L2 learning. In CF targeting vocabulary errors, such a relationship was not found to be significant. This can be accounted for based on the different depth of cognitive processing required for grammar and vocabulary items. However, when the learners rewrote the texts, the study found that correct understanding was strongly related to their correct use of forms and vocabulary. This suggests that an accurate understanding and interpretation of CF is crucial for the feedback to bring about L2 development.

Writing teachers provide written CF, assuming that their students will correctly interpret and understand CF, especially if the feedback is explicit. However, as the present research
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shows, CF is not correctly understood all the time. Given that correct understanding of CF seems the first step for the students to benefit from CF (Carroll, 2000), teachers may need to seek some means to promote learner correct understanding of their feedback. A couple of strategies to minimize misinterpretation of CF based on research into written CF can be suggested here. First and foremost, it is worth observing whether there are some linguistic features learners consistently use incorrectly even after CF has been provided for those features. This could be a good and reliable indication that learners might not correctly understand CF. Second, judicious use of metalinguistic explanations can provide an alternative. This can be done for an individual student or the whole class, according to specific demands. The features related to errors students consistently make are good candidates for metalinguistic explanations.

The present study departed from previous research into written CF, in that it was process-oriented classroom-based research, and it examined the relationship between learner processing of CF and their immediate uptake and use in new writing as well. The research findings call for more process-oriented research, which will deepen our understanding of learners’ actual use of CF. However, the present research suffers from several shortcomings. For instance, like other research which employs verbal reports as a means of measuring learner cognitive process, it cannot be guaranteed that all of the thoughts the learners experienced for CF were fully verbalized. The learners’ general propensity to articulate their thoughts could have affected the quantity and quality of verbal reports. Individual differences (e.g., preferred types of CF and learners’ English proficiency level) might also influence the findings of the research. In addition, the present research used a dichotomous approach in the analysis of learner performance: it only focused on whether the performance was correct or not. By examining how learner IL comes closer to TL form (i.e., interlanguage analysis in Doughty and Varela’s 1998 research) as they receive CF, future research will help us understand the role of CF in the process of IL development more accurately.

REFERENCES


Bitchener, J., & Knoch, U. (2010a). The contribution of written corrective feedback to


van Beuningen, C., De Jong, N., & Kuiken, F. (2012). Evidence on the effectiveness of


**APPENDIX**

Picture Prompt

Applicable levels: College, adults

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