The Effects of Different Types of Oral Corrective Feedback on the Development of Explicit/Implicit L2 Knowledge of English Articles

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The role of oral corrective feedback (CF) in second language (L2) learning has been extensively investigated. However, little attention has been given to the relationship between different types of CF and explicit/implicit L2 knowledge. For this reason, the present study explored the effects of recasts and metalinguistic feedback on the development of explicit and implicit knowledge of the English articles. Sixty-three university students enrolled in intermediate Communication English classes participated, and they were assigned into a metalinguistic group, a recast group, and a control group. While the students engaged in meaning-based activities (i.e., retelling stories), the feedback groups received respective CF on the errors of English articles and the control group did not receive any feedback. Untimed grammatical judgement tests were employed to measure the students' improvement of explicit knowledge and elicitation oral imitation tests were used to examine their gains of implicit knowledge. The study found that both recasts and metalinguistic feedback equally facilitated the development of explicit knowledge over time. However, they were not as effective as in the improvement of implicit knowledge, showing a short-term effect on the development.

Key words: recasts, metalinguistic feedback, implicit and explicit L2 knowledge, English articles

1. INTRODUCTION

The effects of oral corrective feedback (CF) on second language (L2) learning have been a central topic of discussion in the field of second language acquisition (SLA) in the last
decade. CF takes various forms (Ellis, Loewen, & Erlam, 2006). It can provide an indication that the learner has committed an error, a correct form of the error, and/or some metalinguistic explanations regarding the error. Among the various ways of categorizing CF, the most commonly used one is based on the degree of explicitness/implicitness of CF. Explicit CF overtly draws learners’ attention to an incorrect feature while implicit CF does not overtly warn learners that an error has been committed. Instead, it unobtrusively provides a correct form (i.e., recasts) or repeats the learner’s erroneous utterance to raise the learner’s awareness (i.e., repetitions). In addition, CF can be classified according to the information CF delivers to the learner. More specifically, some CF provides a model (e.g., recasts and direct error correction), some give learners another chance to modify their initial erroneous utterances (e.g., clarification requests and elicitations), and some provide the rule related to the errors learners have committed (e.g., metalinguistic feedback).

The differing roles of different types of oral CF in L2 learning have been investigated in many L2 studies (Ammar & Spada, 2006; Lyster & Saito, 2010). The two main categorizations mentioned above (i.e., the degree of explicitness/implicitness and the types of information delivered in CF) were used to compare different types of CF. Thus far, however, the findings have been inconclusive. Some studies found that explicit CF was more effective than implicit CF while others found no differences (Lyster & Saito, 2010). Also, some studies have reported that CF which triggered learner modification was more effective than CF that provided the correct forms (Ammar, 2008; Ammar & Spada, 2006; Lyster, 2004). Although many studies have investigated different types of CF, most of the studies did not distinguish the types of learners’ L2 knowledge (i.e., explicit and implicit knowledge). The distinction between explicit and implicit knowledge has long been discussed in the field of psycholinguistics. SLA researchers with psycholinguistics backgrounds have examined the relationship between L2 and explicit/implicit types of instruction and knowledge in numerous studies (Dekeyser, 2003; Han & Ellis, 1998). However, little research into CF has looked into the effects of different types of CF on different types of L2 knowledge (Ellis, 2005; Rassaeri, Moinzadeh, & Youhanaee, 2012) despite its considerable interest to L2 researchers.

In order to fill this gap in SLA literature, the current study examines the varying effects of different types of CF on the development of explicit and implicit L2 knowledge. The study, specifically, compares recasts with metalinguistic feedback since they differ in the degree of explicitness and in the information they deliver. The following section will provide more explanations and discussions regarding explicit/implicit feedback and knowledge.
2. LITERATURE REVIEW

2.1. Implicit and Explicit CF: Recasts and Metalinguistic Feedback

Recasts are a type of implicit CF which has been examined and discussed in many L2 studies. Long (2007) defines recasts as follows:

[A] reformulation of all or part of a learner’s immediately preceding utterances in which one or more non-target-like items is/are replaced by the corresponding target language form(s), and where, throughout the exchange, the focus of the interlocutors is on meaning, not language as object. (p. 77, emphasis in original)

Many classroom observational studies reported that recasts are the most frequently used CF strategies in communicative language classrooms (Lyster & Ranta, 1997; Sheen, 2004). This is in part because recasts are unlikely to interrupt the flow of communication by virtue of their implicitness and they are “time-saving, less threatening to student confidence” (Loewen & Philp, 2006, p. 537). In addition to these pedagogical and practical advantages, some researchers suggest psycholinguistic benefits in that recasts provide both positive evidence (i.e., models) and negative evidence (Long, 2007; Saxton, 1997). Recasts are provided immediately following the learner’s non-target-like utterances and this naturally results in the juxtaposition of the correction and the incorrect utterances, enhancing the differences between them. This allegedly leads learners to compare two forms and find the contrast (i.e., noticing the gap). Furthermore, since a recast is a reformulation of the learner’s own utterance, the learner already has prior comprehension of at least part, if not all, of the message and understands all or part of the interlocutor’s recasts. The learner’s prior understanding of message (i.e., meaning) may enable the learners to pay attention to the forms in the interlocutors’ recasts.

Recasts, as mentioned above, theoretically create the optimal condition for cognitive comparison (Ellis & Sheen, 2006; Long, 2007). However, the role of recasts as corrective feedback has been questioned by some researchers in terms of the saliency of recasts to learners (Lyster, 1998; Lyster & Mori, 2006). It has often been reported that recasts are provided in an ambiguous manner, which makes it difficult for learners to distinguish recasts from non-corrective repetitions (Lyster, 1998). In other words, learners often consider recasts as a response to the content of their utterance not as a correction to the form. This is especially the case in classrooms where the primary focus of the teacher and students is on meaning (Lyster & Mori, 2006). Another issue surrounding recasts is that the degree of their explicitness/ implicitness varies depending on how recasts are provided. Recasts can be more explicit by maintaining a narrow focus (i.e., correcting a single error
at a time), by using a declarative form, and by using a prosodic emphasis on the corrected element (Ellis & Sheen, 2006). Several studies reported that the explicit form of recasts led to a higher level of learner uptake or repair (Kim & Han, 2007; Kim, 2011, 2012). Thus, defining recasts as an implicit type of CF without considering how they are provided can be an oversimplification. Nonetheless, recasts are generally accepted as an appropriate corrective strategy in L2 classrooms without impinging on communicative and meaning-based activities.

In contrast to recasts, metalinguistic feedback is a type of explicit CF. Lyster and Ranta (1997) defined metalinguistic feedback as “comments, information, or questions related to the well-formedness of the learner’s utterance” (p. 47). Compared to recasts, the teacher’s corrective intent is evidently provided to learners. Metalinguistic feedback can be operationalized in different ways. It generally indicates that there is an error somewhere (e.g., Can you see your error?). It can also provide some grammatical terminology that refers to the nature of error as in Example 1. Sometimes, metalinguistic feedback is provided along with correct forms.

In the following example from Ellis et al. (2006), the learner was given metalinguistic feedback including information on the target feature:

Example 1

Learner: He kiss her.
Researcher: Kiss – you need past tense.
Learner: He kissed.

In this example, the researcher’s corrective intent was clearly delivered and the learner was informed of the source of his error. Knowing why his initial utterance was incorrect is considered as knowing the abstract rule of the target form, which is what Schmidt defines as understanding. According to Schmidt (2001), while noticing is simple awareness of specific forms, understanding is a deeper level of awareness which entails knowing the rule or principle that governs the language feature. Thus, it can be hypothesized that metalinguistic feedback may assist learners in developing awareness at the level of understanding.

A great deal of research has investigated the effects of implicit and explicit feedback on L2 learning (Carroll & Swain, 1993; Kim & Mathes, 2001). Some of the studies examined the relative effects of implicit and explicit feedback. Many studies demonstrated that explicit CF was more effective than implicit CF (Carroll & Swain, 1993; Rosa & Leow, 2004). For instance, Carroll and Swain (1993) explored the relative effects of implicit feedback and explicit feedback on the acquisition of English dative alternation. The results showed that the group that received explicit corrective feedback outperformed the group
that received implicit feedback. Carroll and Swain reasoned that explicit feedback might have been of more benefit because it identified the precise location and nature of erroneous performance, while implicit negative feedback required the learners to engage in a good deal of mental guesswork. However, other studies found no difference (Kim & Mathes, 2001; Sanz, 2003). For example, Kim and Mathes (2001), like Carroll and Swain (1993), investigated the relative effects of implicit (i.e., recasts) and explicit (i.e., metalinguistic information) feedback on English dative alternation. Unlike Carroll and Swain’s study, no differences were found.

Based on previous research, it is difficult to reach firm conclusions about the relative effects of implicit and explicit CF on L2 learning. There are two good reasons. First, the two types of CF were operationalized differently across the studies. Most of the studies employed recasts as implicit CF, even if as mentioned earlier, recasts can take various forms. However, the studies did not clearly explain how recasts were provided (e.g., the degree of explicitness). Explicit CF was also provided in various forms: simple indications of errors, metalinguistic CF with or without provision of correct forms, or some combinations of these strategies. Second, most of the tests employed to measure L2 learning (e.g., grammaticality judgment tests, sentence completion, and translation tests) in previous studies clearly favored the use of explicit knowledge as they did not require learners to use their implicit knowledge rapidly online and had no communicative purpose. In other words, most studies only tested the development of explicit knowledge.

Taking into account the problems of previous studies, the current study clearly operationalizes recasts and metalinguistic feedback and examines their effects on both implicit and explicit L2 knowledge. Prior to introducing how the feedback has been defined, different types of L2 knowledge and measurements will be discussed in the following section.

2.2. Implicit and Explicit L2 Knowledge

The distinction between implicit and explicit L2 knowledge has been a matter of contention in the field of SLA (Ellis, 2005; Ellis, 2009a; Zhang, 2015). Implicit knowledge is described as intuitive and procedural knowledge of language. This enables the learner to comprehend and produce the language in real time without conscious recourse to rules and without the need to monitor comprehension and production. In contrast, explicit knowledge refers to conscious and declarative knowledge the learner has about the language. In other words, the learner has a degree of awareness of the regularities of the language and is able to articulate them.

While a consensus exists regarding the differentiated nature of L2 knowledge, there has been argument over the interface between implicit and explicit knowledge: the non-
interface position, the strong interface position, and the weak interface position (N. Ellis, 1994, 2005). Advocates of the non-interface position believe that implicit and explicit knowledge are two distinct types of knowledge and are held separately in brain, so that one cannot be converted into the other. According to the strong interface position, explicit knowledge can be converted into implicit knowledge when learners practice explicit and declarative rules. The weak interface position argues that explicit knowledge can assist in acquisition of implicit knowledge by making some aspects of input noticeable to learners. The weak interface position motivates renewed interest in explicit instruction (i.e., focus on form) and argues that instruction needs to be integrated into meaningful communication that requires learners to communicate, while bringing their attention to some linguistic features in the input (Long, 1991). While the interface between implicit and explicit knowledge continues to be a controversial issue in SLA, there has been a wide agreement among SLA researchers and practitioners that L2 learning involves both implicit and explicit learning, and that implicit and explicit knowledge interact at some level (N. Ellis, 2005).

Along with the interest in different types of L2 knowledge, effective ways of measuring implicit and explicit knowledge have been discussed in SLA literature (Ellis, 2005, 2006, 2009a, 2009b). In order to assess different types of knowledge, it is essential to establish criteria to distinguish explicit and implicit knowledge. Ellis (2006, 2009a, 2009b) claims that a test which measures implicit knowledge should require learners to respond according to ‘feeling’ and draw their attention to meaning. In addition, it should be administrated under time pressure and should not require learners to use their metalinguistic knowledge. In contrast, the test designed to measure explicit knowledge should require learners to respond using ‘rules’ and call their attention to form. In addition, it should be administrated without any time pressure and require learners’ metalinguistic knowledge.

Attempts have been made to develop measurements of explicit and implicit L2 knowledge in line with the criteria mentioned above (Han & Ellis, 1998; Ellis et al., 2006). Ellis (2009c), for example, examined the reliability of five tests which have often been used as measures of implicit and explicit knowledge. The validity of elicited oral imitation tests, oral narrative tests, and timed grammatical judgment tests which require learners to respond using their feelings in a limited time were examined as a means of measuring implicit knowledge. Also, the validity of untimed grammatical judgment tests and metalinguistic knowledge tests which allow learners enough time to consider rules were tested as a tool to measure explicit knowledge. Ellis (2009b) found all these tests valid and reliable to access different forms of L2 knowledge.

Only a few studies have focused on the role of oral corrective feedback (CF) in developing different types of L2 knowledge (Ellis et al., 2006; Loewen & Nabei, 2007). For example, Loewen and Nabei (2007) compared the effects of three different forms of
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CF, metalinguistic feedback, recasts, and clarification requests, on learners’ performance on three different tests which aimed to measure both explicit and implicit knowledge. Sixty-six Japanese learners of English participated in the study. The study found that the feedback groups outperformed the control group, but there was no group difference across different types of CF and L2 knowledge. However, Ellis et al. (2006) reported a different result. They investigated the role of recasts and metalinguistic feedback in the development of implicit and explicit knowledge of past tense -ed. They concluded that explicit CF was more effective than implicit CF in developing both explicit and implicit knowledge. Rassaei et al. (2012) also found that explicit feedback was more effective than implicit CF. They explored the effects of recasts and metalinguistic feedback on the acquisition of implicit and explicit knowledge of the English articles in Persian EFL classes. The results showed that metalinguistic feedback was more useful in the acquisition of both implicit and explicit knowledge compared to recasts.

As mentioned above, only a limited number of studies have examined different types of L2 knowledge affected by different types of CF. Moreover, they resulted in inconclusive outcomes, and this calls for more research on the area.

2.3. Target Feature: English Articles

English articles, the referential indefinite ‘a’ for referring to something or someone for the first time, and the anaphoric definite ‘the’ for referring to something and someone already mentioned, were chosen as the target feature for the current study. The choice of articles as target forms was made for the following reasons. First, the articles ‘the’ and ‘a’ are highly frequent morphemes in English (Sinclair, 1991). Despite their high frequency, English articles remain widely recognized as a difficult feature for Koreans to acquire; thus, article acquisition appears to be late and even advanced Korean learners of English often make errors in their use of articles (Ko, Ionin, & Wexler, 2009). One of the reasons for these difficulties is the lack of any equivalent grammatical feature in Korean (Ekiert, 2010; Ko et al., 2009). Moreover, usage of English articles is complicated and context-specific, which leads learners to commit frequent errors. Nevertheless, the teacher seldom corrects students’ errors related to the articles, especially while they are engaged in meaning-based conversation activities since article errors rarely interfere with communication (VanPatten, 2004). In addition to their low-communicative value, English articles are unstressed function words and hence perceptually non-salient and semantically lightweight (Master, 1997). This implies that it is difficult for learners to acquire articles through only natural exposure to forms in the input. Master (1997) points out that attention to the article system is essential because article errors may leave the impression that learners have inadequate control of the language, especially in academic settings where the accuracy of language use
is often considered critical. All of the above conditions regarding the acquisition of the articles highlight the importance of examining the role of instruction and/or CF in the acquisition of English articles. Of particular interest to the current study is the effectiveness of different types of oral CF on the development of explicit and implicit knowledge of English articles. This is based on Ellis’ (2006) investigation into the difficulty of acquiring 17 grammatical structures as implicit and explicit knowledge. Ellis reported learners showed the widest gap between two types of knowledge of the English articles, which implies that CF targeting articles may differently affect the development of explicit and implicit knowledge. However, little research has examined the acquisition of English articles, differentiating explicit and implicit knowledge.

To fill the gaps in L2 literature mentioned above, the current study aims to investigate the effects of different types of CF on developing explicit/implicit L2 knowledge of English articles. The study seeks answers to the following research questions:

1. What are the effects of recasts and metalinguistic feedback on the development of implicit and explicit knowledge of English articles?
2. Do recasts and metalinguistic feedback have differing effects on the development of implicit and explicit knowledge of English articles?

3. METHOD

3.1. Participants

Three intact intermediate EFL classes taught by an English-speaking teacher at a university in Korea participated in the current study. They were placed in the intermediate level based on TOEIC test scores ranging from 450 to 600. All students were freshmen at the university and took the classes as a mandatory course. The focus of the course was on developing communicative skills through meaning-based oral activities such as role-plays, games, and interviews. The class sizes ranged from 19 to 22. A total of 63 students took part in the study. Two out the three classes served as experimental groups (21 students in a recast group; 22 students in a metalinguistic feedback group), and the other served as a control group (20 students in a control group). The teacher had taught EFL for 8 years and holds a Master’s degree in English education.

The interviews conducted before the experiment with the teacher revealed that most of the participating students frequently made errors in their use of articles, but any explicit instruction about using articles was not provided in the classes. Nevertheless, it was likely that the students would know the target forms ‘a’ and ‘the’, even if they did not have full
understanding or control over their use.

3.2. Treatments

In order to compare relative effects of oral CF on L2 development, one experimental group received recasts and the other group received metalinguistic feedback. How each feedback was offered is explained below.

3.2.1. Recasts

The recasts used in the current study were typically declarative and a partial type. This type of recasts might be considered to lie at the explicit end of the continuum of explicitness (Ellis & Sheen, 2006), but, nonetheless, they minimally interrupted the flow of discourse. The choice of recasts with explicit characteristics was made since recasts in interrogative form are often considered as a reaction to content but not as a correction of the learner’s non-target-like utterances. The following examples from the current study shows how recasts were operationalized in the current study:

Example 2
Student: A bat flied to the home of a weasel by mistake. Bat begged for his life.
Teacher: The\textsuperscript{1} bat begged for

Example 3
Student: The weasel agreed with that the bat was not mouse.
Teacher: The bat was not a mouse.

3.2.2. Metalinguistic feedback

Metalinguistic feedback was operationalized as a teacher’s provision of metalinguistic information followed by a repetition of the incorrect form. For example:

Example 4
Student: Later, foolish bat went into the home of another weasel.
Teacher: Bat? Can you think about your grammar. You’re talking about the same bat you talked before.

\textsuperscript{1} with a prosodic stress on the corrected part
3.3. Overall Procedures

The study employed a quasi-experimental design with a pretest, treatment, posttest and a delayed posttest. The overall procedure was shown in Table 1.

**TABLE 1**

<table>
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<th>Overall Procedures</th>
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<tr>
<td><strong>Session</strong></td>
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<tr>
<td>Session 1</td>
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<td>Session 2</td>
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<tr>
<td>(Two days after session 1)</td>
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<td>Session 3</td>
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<td>(Three days after session 2)</td>
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<tr>
<td>Immediate posttests</td>
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<td>Session 4</td>
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<tr>
<td>(Two weeks after session 3)</td>
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For the purpose of collecting a profile of each individual student, at the beginning of the experiment, the participants’ age, gender, and educational backgrounds were requested. In addition, at the end of the experiment, the students were required to answer three open-ended questions that inquired about their awareness of the focus of the study and their focus while they were engaged in the tests and tasks.

3.4. Instructional Materials and Procedures

Two treatment sessions were conducted. Two experimental groups and one control group engaged in the same type of tasks (i.e., retelling stories). Two Aesop fables were used (see Appendix for an example). For the purpose of the study, the researcher made slight changes to each story and created four different versions. Thus, each group would have stories differing in minor ways. This attempt was made to require the students to focus primarily on meaning.

The researcher had two meetings with the teacher before the treatment sessions started. In the first meeting, the researcher shared the fables to ensure whether or not the tasks were suitable for the intermediate level students. After receiving confirmation, the researcher explained and showed some examples of recasts and metalinguistic feedback the teacher
would use. He was already familiar with the feedback types. The teacher and researcher rehearsed how he would provide feedback when the students retold the stories. In the second meeting, the rehearsal took place one more time. The teacher looked through all of the sentences that would appear in the tests and confirmed that the level of vocabulary was suitable for the students.

All groups including the control group were engaged in the same activities, retelling stories. While the feedback groups received either recasts or metalinguistic feedback to the errors related to the target forms, the control group did not receive any feedback. The procedures were as follows: (1) The students were assigned into four groups. Each group received one of the four versions of the same fable. (2) The students were told that they had only three minutes to read the story and they needed to read it carefully because they would be asked to retell it to other groups. (3) The teacher collected the stories and provided a word list they needed to draw from to retell the story. (4) The students were given five minutes to plan the retelling of their story. (5) Each group retold the story to the entire class, with each individual in the group providing only one or two sentences before passing the speaker role to the next group member. (6) The students in other groups were told that each group had been given a slightly different version of the same story and that they were to listen carefully to identify the differences. (7) Whenever a student made an error in the use of articles, the teacher provided either a recast (in the recast group) or metalinguistic feedback (in the metalinguistic feedback group).

3.5. Testing Instruments and Procedures

Two days before the treatment sessions started, the students took pretests, and the immediate posttests were completed as soon as the second treatments were completed. Two weeks after the second treatment session, delayed posttests were completed. For each testing session, two tests were administered in the following order: untimed grammaticality judgment tests and oral imitation tests. The oral imitation test was designed to measure implicit knowledge (Erlam, 2009), while the untimed grammaticality judgment test aimed to measure explicit knowledge (Ellis, 2005).

3.5.1. Untimed grammaticality judgment test (UGJT)

The test consisted of 40 sentences. Twenty sentences were directed at the target feature, the use of definite and indefinite articles, and of the 20 sentences, 10 were grammatically correct and 10 were grammatically incorrect. The remainder targeted other structures such as relative clauses, subject-verb agreement, and others. The sentences were randomly reshuffled to create three different versions of the test (i.e., pretest, immediate posttest,
delayed posttest). The test was a pen-and-paper format and each item was presented on a new page. The students were required to (a) indicate whether each sentence was grammatically correct or incorrect and to (b) underline the erroneous part of the sentence to prevent accidental correct responses. The students were allowed to take as much time as they wanted to, but they were not allowed to turn back to look at any part of the test that they had already completed.

3.5.2. Elicitation oral imitation test (EOIT)

The test consisted of 20 items, and among these, 13 items targeted the use of indefinite and definite articles, and the remaining 7 items targeted other linguistic features such as comparative adjectives and verb tense. The items were randomly shuffled in different orders to create three different versions of the test. The students listened to each item once on an audiotape while watching the corresponding picture on a computer screen. In the use of EOIT, it is important for learners to pay attention to the meaning rather than form (Ellis, 2005). Thus, the students were first required to (a) indicate on an answer sheet whether the picture corresponded to what they heard (circle TRUE) or not (circle FALSE) and then to (b) repeat the sentence orally in correct English. Each of the 13 items contained one or two sentences targeting the articles. The total number of obligatory contexts included 16 indefinite and 13 definite articles. Among 16 cases of indefinite articles, 7 were grammatically correct and 9 were incorrect. Of the 13 cases of definite articles, 6 were used correctly, and 7 were used incorrectly.

Since most of the students were not familiar with the EOIT, there was a practice session prior to the pretests. In the practice session, five items (2 grammatical and 3 ungrammatical items, not including the use of articles) which were not presented in the real test were provided, and the students responded well to the practice test as per the researcher’s intention. See Table 1 for overall procedures of the study.

3.6. Coding and Data Analysis

3.6.1. Untimed grammaticality judgment test

The students’ answers responding to the test items targeting the use of indefinite and definite articles were coded. The students’ responses were scored as either correct (1 point) or incorrect (0 point). For ungrammatical sentences, the responses that correctly underlined the source of error were scored as correct. Instances where a student marked the ungrammatical sentence as ungrammatical but he failed to indicate the source correctly were not counted as correct. The maximum score of the test was 20. One-third of the total
data were coded by an independent rater, and the rater was given general information of the study. There was a 97% agreement rate for the pretest and a 96% agreement rate for both posttest and delayed posttest. Test-retest reliability (Pearson $r$) was calculated for the control group ($n = 20$). For the pretest and the immediate posttest, $r = .81$ and for the pretest and the delayed posttest, $r = .85$ ($p = .01$)

3.6.2. Elicited oral imitation test

Only the students’ responses to the target feature were coded. The total number of obligatory contexts was 29 including 16 indefinite and 13 definite articles. The students’ imitated statements were coded based on supplying the articles in obligatory context irrespective of lexical errors or other grammatical errors. Example 5 shows how the students’ responses were coded:

Example 5

A man is sitting on a chair. The chair is made of wood.

In this example, there are two contexts involving use of the indefinite article, and one context involving use of the definite article. Learners’ correct responses in all three contexts were scored as 3; correct responses for two instances were coded as 2; correct responses for only one context were scored as 1; responses which were incorrect in all three contexts were coded as 0. Instances where a student corrected his/her initial incorrect sentence were still scored as 0, since this would provide the more suitable measure of implicit knowledge. There were 29 obligatory contexts; the maximum score of the test was 29. One-third of the total data were coded by the independent rater, and there was a 89% agreement rate for the pretest, a 91% agreement rate for the posttest, and a 90% agreement rate for the delayed posttest. Test-retest reliability for the control group was .79 for the pretest and the immediate posttest and .83 for the pretest and the delayed posttest.

3.6.3. Statistical analysis

In order to measure the group differences on the EOIT and the UGJT prior to the treatments, a one-way ANOVA was performed. To investigate the development over time from the pre-test to the delayed posttest as a result of CF, mixed between-within group ANOVAs were conducted with time as a within-group independent variable and CF treatment as a between-group independent variable and with test scores as a dependent variable. A Bonferroni post-hoc analysis was performed.
4. RESULTS

4.1. Effects of Feedback on the Development of Explicit Knowledge

Table 2 presents descriptive statistics for the UGJT over the three testing periods. A one-way ANOVA on pre-test scores across the three groups was conducted to test the group differences in the pretest, and the result showed no differences, $F(2, 60) = .960, p = .389$. Table 2 and Figure 1 show that all three groups achieved some gains from the pretest to the posttest, but all groups’ mean scores declined in the delayed posttest.

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Delayed post-test</th>
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<tbody>
<tr>
<td>Recast (n=21)</td>
<td>5.71</td>
<td>8.42</td>
<td>8.28</td>
</tr>
<tr>
<td>Metalinguistic feedback (n=22)</td>
<td>5.09</td>
<td>8.31</td>
<td>8.04</td>
</tr>
<tr>
<td>Control (n=20)</td>
<td>5.30</td>
<td>5.75</td>
<td>5.65</td>
</tr>
</tbody>
</table>

In order to examine achievement from the pretest to the delayed posttest, a mixed between-within-group ANOVA was performed, and Table 3 presents the results. As Table 3 shows, there are main effects for time, CF, and the interaction between CF and time. This means that CF was effective for the acquisition of indefinite and definite article usage, there were significant improvements over time, and the groups improved differently.

A post-hoc analysis was conducted to identify where the group differences resided. The result revealed that both feedback groups outperformed the control group. However, there was no difference between the feedback groups ($p > .05$). This indicated that both recasts
and metalinguistic feedback were effective in the development of learner explicit knowledge of the target forms, but there was no significant difference between the recast group and the metalinguistic feedback group.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback (between subjects)</td>
<td>2</td>
<td>11.782</td>
<td>.000</td>
<td>.282</td>
</tr>
<tr>
<td>Time (within subjects)</td>
<td>2</td>
<td>138.840</td>
<td>.000</td>
<td>.698</td>
</tr>
<tr>
<td>Feedback*time</td>
<td>4</td>
<td>22.540</td>
<td>.000</td>
<td>.429</td>
</tr>
</tbody>
</table>

Since an interaction between the feedback and time was found, a one-way within group ANOVA was performed to examine the improvement in each group over time. The results showed significant gains over time for the recast group, $F(2, 20) = 63.913, p < .005$, and post-hoc comparisons indicated a significant gain between the pretest and the posttest. No difference was found between the posttest and the delayed posttest although the mean scores decreased slightly. This indicated that the gains from recasts were sustained in the delayed posttest. The metalinguistic group also showed a similar result. They improved over time, $F(2, 21) = 121.330, p < .005$, and like the recast group, there was a significant difference between the pretest and the posttest, but there was no difference between the posttest and the delayed posttest, showing that the improvement observed in the posttest continued in the delayed posttest.

4.2. Effects of Feedback on the Development of Implicit Knowledge

Table 4 shows descriptive statistics for the EOIT over the three testing periods. In order to test the group differences in the pretest, a one-way ANOVA on pre-test scores was conducted, and the result showed no differences among the groups, $F(2, 60) = .351, p = .705$. Table 4 and Figure 2 show that all three groups showed some improvements from the pretest and the posttest, but the experimental groups’ mean scores decreased in the delayed posttest.

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recast (n=21)</td>
<td>9.14</td>
<td>2.45</td>
<td>12.33</td>
<td>3.33</td>
<td>11.66</td>
<td>3.34</td>
</tr>
<tr>
<td>Metalinguistic feedback (n=22)</td>
<td>9.72</td>
<td>2.14</td>
<td>13.63</td>
<td>1.83</td>
<td>12.50</td>
<td>1.84</td>
</tr>
<tr>
<td>Control (n=20)</td>
<td>9.30</td>
<td>2.51</td>
<td>9.50</td>
<td>2.35</td>
<td>9.85</td>
<td>2.34</td>
</tr>
</tbody>
</table>
In order to examine the progress from the pretest to the delayed posttest, a mixed between-within-group ANOVA was performed with time as a within-group independent variable, CF as a between group independent variable, and the test scores as a dependent variable, as shown in Table 5. As Table 5 shows, time and CF had significant effects as did the interaction between CF and time. This means that CF played a different role in the development of implicit knowledge of the target forms over time.

A post-hoc analysis showed that the difference among the groups mainly was a result of the gap between the control group and the metalinguistic feedback group. A statistically significant difference was found between the control group and the metalinguistic group (p = .005) but not between the control group and the recast group (p = .147). In addition, the difference between the recast group and metalinguistic group was not statistically significant (p = .653). These findings indicated that metalinguistic feedback was effective in the development of learners’ implicit knowledge of the target forms, but it did not surpass recasts. However, interestingly, the recast group did not outperform the control group.

In order to examine the change observed in each group over time, a one-way within group ANOVA was conducted. Similar to the UGJT, both feedback groups showed significant gains over time. The recast group showed improvement (F = 66.613, p < .05, partial eta squared = .796), and the post-hoc comparisons indicated significant differences
between the pretest and the posttest ($p < .001$) and the posttest and the delayed posttest ($p = .028$). The metalinguistic feedback group also showed gains ($F = 63.585, p < .05$, partial eta squared = .752); the post-hoc comparisons also revealed differences between the pretest and the posttest ($p < .001$) and between the posttest and the delayed posttest ($p = .002$). These findings indicated that both recasts and metalinguistic feedback were effective in the development of implicit knowledge of the indefinite and definite English articles, but the gains the learners achieved significantly declined in the delayed posttests.

One noteworthy finding was observed in the performance of the control group. Without any feedback treatments, they showed some improvements in their scores over time, $F = 3.784, p < .05$, partial eta squared = .165. The improvement mainly stemmed from the gap between the pretest and the delayed posttest ($p = .036$) not from the pretest and the posttest ($p > .05$). However, as the partial square scores show, the effect was minimal.

In the present study, the first research question addressed whether or not recasts and metalinguistic feedback were effective in the development of explicit and implicit knowledge. Both recast and metalinguistic groups outperformed the control group in the posttests and the delayed posttests of the UGJT, and their gains observed in the posttests slightly declined in the delayed posttests, but the decrease was not statistically significant. For the EOIT, the findings were somewhat complicated. The feedback groups showed improvements in the posttests, but their gains did not carry through to the delayed posttests. These findings suggest that recasts and metalinguistic feedback contributed to the development of explicit knowledge, but they had a short-term effect on the improvements of implicit knowledge. The second research question addressed the differences across the groups. The results found no group differences between the feedback groups in the development of both types of knowledge. Interestingly, the control group gradually improved their scores from the pretest to the delayed the posttests in the EOIT, but its effect size was minimal.

5. DISCUSSION

5.1. Effects of CF on the Development of Implicit and Explicit Knowledge

The present study found that metalinguistic feedback was effective in the development of explicit knowledge over time, supporting the previous studies (Ellis et al., 2006; Loewen & Nabei, 2007; Rassaei et al., 2012). One of the reasons why the results are consistent with the significant effects of metalinguistic feedback is that it explicitly warns the learners what is not grammatical, and this makes the errors salient and noticeable. In addition, it explains why the learner’s initial response is wrong, and this could trigger a deeper level of
awareness, or understanding in Schmidt’s (1990, 2001) term, which has been claimed to be more effective than simple noticing in enhancing L2 development (Schmidt, 2001). Carroll (2000) asserts that L2 learning can be initiated when a learner must recognize and analyze (or at least guess) where s/he has made mistake. Metalinguistic feedback fulfills this condition by offering the rule of the target forms.

Like metalinguistic feedback, recasts were found to be effective in the development of explicit knowledge. This result is not congruent with Rassaei et al. (2012). Rassaei et al. reported that the effectiveness of recasts was limited based on the finding that the gains between pretest and posttest did not carry through to the delayed posttest, suggesting recasts had only a short-term effect. They explained this restricted effect based on the implicit nature of recasts discussed in many oral CF studies: in addition to corrective functions, recasts “fulfilled other functions by providing confirmation or additional information, related to content” (Lyster, 1998, p. 62). In other words, recasts are often considered as a reaction to content but not as a correction to the learner’s nontargetlike utterances, and this confusion may render recasts ineffective (Kim & Han, 2007). However, as mentioned earlier, the degree of explicitness of recasts varies depending on how recasts are given. In Rassaei et al. (2012), recasts targeted incorrect use of the English articles with no extra or unusual emphasis on the corrected part of the learner’s incorrect utterance, using a complete sentence. In contrast, in the present study, recasts were usually offered in declarative form using a partial type, putting emphasis on the corrected part of the learner’s utterance. With regard to the level of explicitness, recasts used in the current study were much more explicit than the one offered in Rassaei et al. (2012), and this might lead to the differing result. Ellis et al.’s (2006) finding bolsters this claim; this study used a similar type of recasts to the one offered in the present study, and they found recasts facilitative in enhancing learner explicit knowledge. Thus, it can be said that recasts play a role in developing L2 learners’ explicit knowledge when they are provided in an explicit manner.

The different value of recasts found in the current study and Rassaei et al. (2012) can also be explained by learners’ prior knowledge of the target feature. Since Rassaei et al. did not explain the educational backgrounds of the study participants, the participating learners’ prior knowledge of the forms could not be discussed here. However, for the learners participating in the present study, the exit questionnaires showed that most of the learners had some level of knowledge of indefinite and definite English article usage before the experiment began, although they did not have a clear understanding of the rules and control over the forms. The relationship between learner prior knowledge or readiness and the effectiveness of recasts has been reported in several studies (Mackey & Philp, 1998).

As regards implicit knowledge, the learners in both recasts and metalinguistic feedback showed improvements immediately after the feedback sessions. However, these gains did
not last long. Their immediate posttest scores significantly decreased in the delayed posttest. This finding is somewhat different from the previous studies. For example, Ellis et al. (2006) reported learners’ gradual improvement on their implicit knowledge of the target form (i.e., past –ed) from the pretest to the delayed posttest. Indeed, as Ellis et al. acknowledged, learners already scored high in the pretest that measured their explicit knowledge, which indicated that explicit knowledge of the target form was already well developed in their interlanguage system. The weak interface position claims that explicit knowledge can assist the acquisition of implicit knowledge (Ellis, 1994). Accordingly, in Ellis et al. (2006), the learners’ well-developed explicit knowledge of the target form might play an important role in developing the implicit knowledge of it. In contrast, in the present study, even though the target forms (i.e., indefinite and definite English articles) were not new forms to the learners, they did not score high in the pretest of the UGJT (i.e., average mean scores across the groups were 5.36 out of 20). This suggests that the explicit knowledge they possessed might not be sufficient to assist the development of implicit knowledge unlike the results in Ellis et al. (2006).

Rassaei et al. (2012) also reported that metalinguistic feedback had a significant effect on the development of implicit knowledge of the English articles. Considering the low scores reported in the pretest that measure explicit knowledge, the improvement found in their study cannot be explained based on their IL system of the target forms. One possible explanation is the way CF was offered. In Rassaei et al., the participating learners received CF while they were individually interacting with an interlocutor. In contrast, the current study provided CF when the learners were presenting their group stories to other classmates while they were taking turns. That is, the learners were direct recipients when they presented, but they were not when other group members presented the story. One-on-one intensive interaction in Rassaei et al. might help learners pay close attention to the metalinguistic information (Han, 2002).

Based on the analysis of the findings from the previous studies and the present study, the study suggests that metalinguistic feedback and recasts delivered in an explicit manner seem effective in developing learner explicit knowledge but their contribution to the improvement of implicit knowledge seems limited. When learners already possess a developed IL system of the target form and/or receive CF during intensive one-on-one interaction, CF can bring about the development of L2 implicit knowledge. If this is not the case, in order for learners to reconstruct and control their IL system of the target form and fully develop the implicit knowledge of the form, they might need continued exposure to instruction, time, and practice.
5.2. Differential Effects of CF on the Development of Implicit and Explicit Knowledge

There was no differential effect of recasts and metalinguistic feedback on the development of explicit knowledge. Some may argue that this is because recasts were provided in an explicit manner in the current study. Indeed, this claim is correct. However, one thing that should be noted here is that recasts were used relatively explicitly compared to an implicit type of recasts. Recasts used in the present study are still classified as a type of implicit corrective feedback which does not overtly point out learners’ errors.

When compared in terms of the development of implicit knowledge, the effects of recasts and metalinguistic feedback appeared complicated. Even though the metalinguistic feedback group scored higher than the recast group, the difference was not statistically significant, suggesting that implicit and explicit feedback did not contribute differently to the development of implicit knowledge. This finding seems congruent with the case of explicit knowledge.

However, when the control group’s performance was compared with the feedback groups, an interesting result was found. The metalinguistic group outperformed the control group; the recast group did not. The control group showed a gradual improvement from the pretest to the delayed posttest. The gains between the pretest and the posttest were not significant, but the learners showed some significant gains in the delayed posttest compared to the pretest although the effect size was small. The EOIT seemed to provide the learners with an opportunity to practice, which led to such improvement. In addition, even though the learners practiced the EOIT before collecting data, it was still a new type of test to them. It is possible that they did not show their real ability in the pretest because of their unfamiliarity with the test, and they performed better in the delayed posttest as they became accustomed to the test itself. However, this does not deny the effects of CF, since the CF groups showed significant gains between the pretest and the posttest while the control group did not demonstrate improvement within this period.

6. CONCLUSION

The current study set out to examine the effectiveness of recasts and metalinguistic feedback on the development of learners’ implicit and explicit knowledge of English articles. The study found that both types of CF equally facilitated the development of explicit knowledge over time. However, they were not as effective as they were in the improvement of implicit knowledge, showing a short-term effect on development.

Based on the results of the study, a couple of pedagogical suggestions arise. First, in the
light of the finding that both feedback forms are similarly effective in developing explicit knowledge, the study can suggest that recasts can be as effective as metalinguistic feedback if they are provided in a manner that enhances learner noticing of their errors. This finding encourages the teacher to employ recasts as a tool of correction when they do not want to interrupt the learners’ utterances. However, it should be pointed out that learners’ prior knowledge needs to be considered for recasts to be effective. Since recasts simply offer a correct form of the learner’s error, if s/he has zero knowledge of the targeted form, it is unlikely that he will notice recasts as corrections to the errors and recognize the difference between her/his initial utterance and the correct form in recasts. In addition, the study shows that developing implicit knowledge takes more time and practice. The effects shown in the posttest significantly decreased after CF ceased. This indicates that the two treatment sessions were not enough for the students to develop their implicit knowledge.

The present study has contributed to filling the gap in the studies of CF by exploring differential roles of CF in developing different types of L2 knowledge. However, there are also many limitations, and among them, a couple of shortcomings need to be pointed out for future research. First, as mentioned before, the study examined the target form for which the learners already had some prior knowledge, and this condition enabled CF to be effective. On the one hand, this can be considered a strength, as the study showed how CF worked for the linguistic forms of which the learners already had some knowledge. On the other hand, it constitutes a weakness since the study does not show whether or not CF is effective and what type of CF is effective in establishing new knowledge. In this regard, future research should investigate the role of CF in the development of a linguistic form of which learners have zero prior knowledge. Second, the present study offered only two treatment sessions. It is possible that with more treatments, CF would be effective in the development of implicit knowledge. Future research with lengthy treatments is definitely needed.

REFERENCES

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**APPENDIX**

Fable 1

A bat went into the nest of a weasel by mistake, who ran up to catch and eat him. The bat begged for his life, but the weasel would not listen. "You are a mouse," he said, "and I am a sworn enemy of mice. Every mouse I catch, I am going to eat!" "But I am not a mouse!" cried the bat. "Look at my wings. Can mice fly? Why, I am only a bird! Please let me go!"

The weasel had to admit that the bat was not a mouse, so he let him go. But a few days later, the foolish bat went blindly into the nest of another weasel. This weasel happened to be a bitter enemy of birds, and he soon had the bat under his claws, ready to eat him. "You are a bird," he said, "and I am going to eat you!" "What," cried the bat, "I, a bird! Why, all birds have feathers! I am nothing but a mouse. 'Down with all cats,' is my motto!"

Therefore, the bat escaped with his life a second time.