Relative Effects of Prompts and Recasts on the Development of Implicit and Explicit L2 Knowledge

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This present study concerned whether prompts and recasts that occur during interaction could play a role in L2 development. Adopting an untimed grammatical judgment test and an elicited oral imitation test to measure explicit and implicit knowledge, this study examined the relative effects of prompts and recasts on L2 development of past tense forms. The participants were pre-intermediate learners enrolled in English as a foreign language (EFL) classes at a university in Korea. The learners were assigned to two prompt groups, a recast group, and a control group. The analysis of the untimed grammaticality judgment test revealed that the participants promoted their explicit knowledge of the past tense forms of regular and irregular verbs when prompts were provided. The analysis also showed that the learners who received recasts improved their test scores but only in irregular past tense forms. No significant group difference was found among the treatment groups and the control group in the results of the elicited oral imitation test used to measure implicit knowledge of the target forms. These results indicated that prompts were beneficial for short-term L2 grammatical learning of EFL learners of pre-intermediate level. The implications and limitations are discussed in terms of the role of prompts in driving L2 development.

I. INTRODUCTION

In recent years there has been a growing interest in the role of conversational interaction and feedback in second language (L2) learning. The Interaction Hypothesis integrates the important role of input and output in second language acquisition and emphasizes on the role of negotiated interaction in language development. Long’s (1996, 2006) Interactional Hypothesis has claimed that negotiation for meaning triggers interactional adjustments by native speakers and recasts, or reformulation of a learner’s erroneous utterance in a correct manner, is an effective technique because it conveys needed information about target
language. There is by now evidence to show that interactional feedback is associated with L2 learning. However, a number of studies have found inconclusive results for the effects of recasts. Some studies have reported the beneficial role of recasts in second language acquisition (Doughty & Varela, 1998; Mackey, 2006; Mackey & Oliver, 2002; Mackey & Philp, 1998; Philp, 2003) whereas others found less advantage of recasts when compared to more explicit type of feedback (Ellis, Loewen, & Erolam, 2006; Varnosfadrani & Basturkmen, 2009). Mackey (2006) focused on implicit feedback, recasts and clarification requests, to examine L2 learning of target English features through interactional feedback. Although the positive effects of interactional feedback on the development of question forms were found, other target forms such as past tense were much less developed in her study. Varnosfadrani and Basturkmen (2009) reported that explicit correction was more effective in learning structures that are acquired early while recasts worked better with later developmental features such as regular past tense. In contrast, Yang and Lyster (2010) found that recasts were equally effective in the accurate use of irregular past tense, which is typically acquired early. Therefore, further research on the relationship between different types of feedback provision and L2 development of past tense forms of regular and irregular verbs is necessary.

Despite many investigations on the effectiveness of feedback, little research has focused on the development of explicit and implicit knowledge of the target forms and valid measurements of the two types of knowledge (Ellis, 2006). Much of research has used uptake to examine whether feedback is effective on L2 learning but uptake does not seem to be appropriate measurement for explicit and implicit knowledge. Ellis, Loewen, and Erlam (2006) and Ellis (2006, 2009a) suggested that an untimed grammaticality judgment test and an elicited oral imitation test are valid tests to measure learners’ explicit and implicit knowledge development. Therefore, further research should use the valid tests in order to examine whether different types of feedback affect the development of explicit and implicit knowledge.

In this respect, the current study aimed to examine the relative effects of different types of feedback on L2 learning of past tense forms. Using a pretest and posttest design, this study compared the effects of prompts and recasts on the development of explicit and implicit knowledge of regular and irregular past tense forms.

II. LITERATURE REVIEW

The role of interaction in the second language development has been widely researched for the past two decades. Many interaction theorists have claimed that interaction has positive effects on the development of second language and feedback obtained during
conversational interaction is associated with L2 learning.

Among various types of feedback including explicit and implicit ones, recasts have been received considerable attention in second language development. Recasts are a feedback technique that provides learners with reformulation of their erroneous forms and exemplars of the target features. According to Long (1996), recasts are an effective technique because it conveys needed information about target language while sharing a joint focus on both form and meaning. Previous studies have reported that recasts are the most frequently used and favored type of feedback in ESL or EFL settings (Doughty & Varela, 1998; Ishida, 2004; Iwashita, 2003; Lyster & Ranta, 1997; Panova & Lyster, 2002). For example, Panova and Lyster (2002) investigated the types of feedback provided by a teacher in ESL classroom and found high proportion of recasts. Likewise, recasts appeared to be a more salient type of feedback for Korean EFL learners. Kim (2009) examined to what extent EFL learners perceive interactional feedback as correction. Like other descriptive studies, recasts were the most frequent type of feedback.

However, the findings on benefits for learners who are exposed to recasts are controversial. According to Lyster’s study (2002), recasts were not the most effective type of feedback to draw L2 learners’ attention to form. He argued that “recasts of ill-formed utterances and repetitions of well-formed utterances together appear to confirm or disconfirm the content or veracity of a learner’s message, not its form” (Lyster, 2002, p. 240). Other researchers have examined the relative effects of recasts when compared with prompts. Prompts consisting of prompting moves (i.e., elicitation, metalinguistic feedback, repetition, and clarification request) are a type of corrective feedback techniques to push L2 learners to self-correct (Ammar, 2008; Ammar & Spada, 2006; Lyster & Mori, 2006). Lyster (2004) investigated the effects of recast and elicitation strategies on development of grammatical gender in French in immersion classrooms. The result showed that the elicitation group outperformed the recast group. Ammar and Spada (2006) examined the effectiveness of corrective feedback on acquisition of third-person possessive determiners his and her. They found relative superiority of prompts over recasts in both written posttests and in the delayed oral posttest.

There are a few experimental studies to investigate the benefits of recasts and metalinguistic feedback in L2 development (Ellis, Loewen, & Erlam, 2006, 2009; Sauro, 2009; Sheen, 2007). Ellis, Loewen, and Erlam (2006, 2009) compared the effects of recasts and metalinguistic feedback and found metalinguistic feedback had a greater impact on L2 learning than recasts. The results revealed that learners in the metalinguistic feedback group performed better than those in the recast group on the delayed posttests. Likewise, Sheen (2007) conducted a pretest-treatment-posttest-delayed posttest design to examine whether recasts and metalinguistic feedback had a differential effect on the acquisition of articles. The results showed that the metalinguistic correction group
outperformed both recast and control groups. Sauro (2009) investigated the impact of two types of computer-mediated corrective feedback on the development of adult learners’ L2 knowledge of English zero article. Twenty-three high intermediated learners and advanced adult learners of English were randomly assigned to do pair work with English native speakers. During task-based interaction via text-chat, learners received either metalinguistic feedback or recasts on omission of the English zero article. In immediate posttest, the metalinguistic feedback group increased a mean score while both recast and control groups declined. The findings indicated that metalinguistic information was more beneficial than the recasts.

However, recent experimental studies focusing on past tense have reported inconclusive results. In the previous study of Varnosfadrani and Basturkmen (2009), the late developmental structures (e.g., regular past tense) were more learned by implicit correction, the process of providing the learner with indirect forms of feedback, while the early developmental features (e.g., irregular past tense) were more learned by explicit correction, the process providing the learner with direct forms of feedback. Ammar (2008) pointed out the previous findings seemed to be inconclusive and more experimental and quasi-experimental research would be required to provide solid evidence for interactional feedback.

When investigating the effects of feedback on L2 learners’ knowledge, most studies above did not distinguish the different types of knowledge. In a series of papers, Ellis (2004, 2005, 2006, 2009a) attempted to make a distinction between the two types of knowledge: explicit and implicit knowledge. Explicit knowledge involves conscious awareness of linguistic forms, and it is declarative, inconsistent knowledge, and accessible through controlled processing. In contrast, implicit knowledge is unconscious, intuitive, procedural and systematic knowledge, and accessible through automatic processing. Additionally, explicit knowledge can be stated or verbalized whereas implicit knowledge cannot be described. Default L2 production relies on an L2 learner’s implicit knowledge, which has been internalized by the learner. Learners try to access explicit knowledge when they have difficulty performing an L2 task.

Therefore, to investigate whether implicit and explicit knowledge can be developed by prompts and recasts, it is necessary to present a valid method to measure both types of knowledge. Ellis (2009b) focused on developing instruments capable of distinguishing between explicit and implicit knowledge and attempted to provide valid measurements of explicit and implicit knowledge. An untimed grammaticality judgment test and a metalinguistic knowledge test were used as tests of explicit knowledge whereas an elicited oral imitation test was used as a test of implicit knowledge. Ellis found that the tests of explicit knowledge were strongly related to the learners’ use of rule and metalinguistic knowledge whereas the tests of implicit knowledge were weakly related to the rule use.
Time pressure was associated with implicit knowledge but not with explicit knowledge. Further investigations focusing on an untimed grammaticality judgment test and an elicited oral imitation test were followed to construct the validity of the measurements. With a similar experimental design, Loewen (2009) examined participants’ performance on both timed and untimed grammaticality judgment tests to construct validity of grammaticality judgment tests. Participants were eighteen native speakers of English and one-hundred-fourty L2 learners of English in New Zealand. L1 speakers scored 80% on the timed grammaticality judgment test and over 90% of the untimed test. L2 speakers scored 55% of the timed test and 80% of the untimed test. L1 speakers had an average score of over 90% on both tests and on the untimed ungrammatical items but had a score of 70% on the timed ungrammatical items. L2 students scored over 80% of the untimed grammatical items of the test and almost 80% of the timed grammatical items. However, they scored under 35% of the timed ungrammatical items. The findings indicated that when performing the ungrammatical items under time pressure, L2 learners had limited time to access their explicit knowledge in order to make grammatical judgment on the items. In contrast, in the untimed ungrammatical items, they were encouraged to access their explicit L2 knowledge.

The validation of an elicited oral imitation test on the measurement of implicit knowledge was examined in Erlam’s study (2009). The elicited oral imitation test involves grammatical and ungrammatical stimuli and requires participants to focus on meaning rather than form. Participants were twenty native speakers of English and ninety five L2 learners of English enrolled at a university in New Zealand. Thirty of ninety five L2 students were considered as higher-intermediate and the proficiency level of the others was lower-intermediate. 17 target grammatical structures of English were verb complements, regular past tense, questions tags, yes/no question, modal verbs, unreal conditionals, since and for, indefinite article, ergative verbs, possessive -s, plural -s, third person -s, relative clauses, embedded questions, dative alternation, comparatives, and adverb placement. The results showed that native speakers repeated 97% of grammatical items correctly and corrected 92% of ungrammatical items. The L2 learners repeated 62% of grammatical items correctly and corrected 35% of ungrammatical items. Erlam suggested that “the high performance of native speakers on this test in relation to that of non-native speakers is evidence of the validity of the test as a measure of implicit knowledge” (p. 88).

In sum, based on the literature, it seems likely that an untimed grammaticality judgment test and an elicited oral imitation test are valid measurements to explore whether various types of feedback affect L2 development of explicit and implicit knowledge. With the measurements, Ellis et al. (2006, 2009) conducted an experimental study to examine the effects of implicit and explicit corrective feedback on acquisition of the past tense -ed. Participants were low intermediate learners of English and they were assigned to a recast
group, a metalinguistic correction group, and a control group. All groups participated in an oral elicited imitation test, an untimed grammaticality judgment test and a metalinguistic knowledge test. Learners in the metalinguistic feedback group performed better than those in the recast group on both delayed oral imitation and grammaticality judgment posttests. The metalinguistic feedback group clearly benefited more than the recast group at the delayed posttests of both oral imitation and grammaticality judgment tests. These findings indicated that the metalinguistic feedback benefited not only explicit knowledge but also implicit knowledge. The finding is compatible with the claim of N. Ellis (2005) that explicit L2 knowledge can facilitate the development of implicit knowledge and explicit negative feedback can promote both explicit and implicit knowledge in L2 learning. However, Ellis et al.’s studies focused on one morphological form, regular past tense, and compared recasts with metalinguistic correction to examine the validity of two measurements that they suggested. This current study focused both regular and irregular past tense verbs, which have different developmental structures, and compared recasts with two types of prompts: elicitation, which is an implicit type, and metalinguistic feedback, which is an explicit type.

As described previously, researchers have been investigating a positive relationship between interactional feedback and L2 learning. The focus of the current study is an exploration of the claim that, through feedback, L2 learners can develop the target language. This study aims to contribute to this line of research by exploring whether feedback provision affects the development of explicit L2 knowledge and implicit knowledge of the target English forms. In addition, this study focuses on investigating which type of interactional feedback most influences L2 learning of past tense forms of regular and irregular verbs in the Korean EFL context.

To explore these research questions, it is important to use valid measurements, which have been examined by previous research. Therefore, in this current paper an untimed grammaticality judgment test and an oral elicited imitation test are used to explore the effects of different types of feedback provision strategies on developing of explicit and implicit knowledge of the English target form.

### III. Method

1. Participants

This study was conducted in an EFL setting in Korea. The participants of the study were thirty-one college students whose age ranged from 20 to 23, with an average age of 21.1. All of the learners reported previous English instruction at elementary, middle and high
school levels. To enroll the English programs, all learner participants were required to take a language program placement test, which consisted of listening, grammar, vocabulary, pronunciation, and fluency. Based on their scores, the participants were assessed as being at pre-intermediate level. Forty-two learners participated at the beginning of the study, but data from eleven students were excluded because they did not attend all parts of the experimental process.

2. Target Forms

The target forms of this study were past tense forms of regular and irregular verbs of English. The forms were selected because L2 learners were familiar with the structures but still produced errors in the forms, according to previous research (Doughty & Varela, 1998; Ellis et al., 2006; Mackey, 2006; Vamosifadrani & Basturkmen, 2009). In addition, the pre-grammaticality judgment test of this study showed that the learners already had L2 knowledge on the forms but the pre-elicited oral imitation test showed that they still made non-targetlike utterances. For example, one student corrected the ungrammatical item of the grammaticality judgment test (e.g., I *finished* my assignment last night) whereas she repeated the erroneous part of the oral imitation test and did not correct it (e.g., ‘She *cry* for two hours last night). In this respect, they were judged developmentally ready for the targeted structures.

3. Design

Students were randomly assigned to a recast group (RG, $N = 8$), a metalinguistic feedback group (MG, $N = 8$), an elicitation group (EG, $N = 8$), and a control group (CG, $N = 7$). Each of the experimental groups received one of the three types of interactional feedback. The first experimental group received recasts, another group received metalinguistic feedback, and the last experimental group received elicitation. As can be seen in Table 1, the last two types of feedback are prompting moves to push L2 learners to self-correct (Ammar, 2008; Ammar & Spada, 2006; Lyster & Mori, 2006).

<table>
<thead>
<tr>
<th>Feedback Types</th>
<th>Continuum of Explicitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recasts</td>
<td>Implicit</td>
</tr>
<tr>
<td>Elicitation (prompts)</td>
<td>Implicit</td>
</tr>
<tr>
<td>Metalinguistic feedback (prompts)</td>
<td>Explicit</td>
</tr>
</tbody>
</table>
Recasts are generally defined as the teacher’s reformulation of a learner’s erroneous utterance without explicit indication of the errors. Recasts are generally implicit, so the native English teacher of the group was instructed not to provide grammatical explanations. Examples of recasts are shown in Example (1).

Example (1) Learner: When I was young, I play piano
Teacher: I played the piano.
Learner: … I played the piano... but not now

Metalinguistic feedback is a type of prompts in that with the feedback, a teacher can raise learners’ awareness using metalinguistic comments and push them to self-correct. Metalinguistic feedback provides “comments, information, or questions related to the correctness of the student’s utterance, without explicitly providing the correct form” (Lightbown & Spada, 2006, pp. 126-127). According to Lightbown and Spada, metalinguistic comments indicate that there is an error in the learner’s utterance (e.g., Can you find your error?). Metalinguistic information provides grammatical metalanguage that points to the nature of the error (e.g. It’s masculine). Examples of metalinguistic feedback are shown in Example (2) and (3).

Example (2) Learner: Yesterday before go out, I finish my homework
Teacher: You need past tense.
Learner: I finished…

Example (3) Learner: They ate lunch… and later drink soda.
Teacher: Is that a regular verb?
Learners: Regular?
Teacher: Past tense.
Learner: oh … drink …. drank soda.

For the elicitation group, the teacher was asked to elicit learners’ self-correction; that is, learners were pushed to produce more accurate utterance in their output. The teachers attempted to elicit completion of the learners’ erroneous utterance and use questions to elicit correct forms. They were under no circumstances to provide grammatical explanations and correct forms (Ammar, 2008; Ammar & Spada, 2006; Lyster, 2004; Lyster & Mori, 2006; Lyster & Ranta, 1997). Examples of prompts are shown in Example (4).

Example (4) Learner: In his high school, he want to be famous
Teacher: He want…?
Learner: He wanted to be famous..
4. Materials

An untimed grammaticality judgment test (UGJT) and an elicited oral imitation test (EOIT) were adapted from the test of Ellis (2005) and Ellis et al. (2006, 2009) to assess development of learners’ explicit knowledge and implicit knowledge on the target language form.

In the current study, the UGJT consisted of 40 items, which were presented in written form. 20 sentences contained the target forms and the other 20 sentences were distractor items. Of the 20 sentences, 10 items targeted regular past tense and 10 items targeted irregular past tense (Table 2). 5 out of the 10 regular past tense items were grammatically correct and the other 5 items were ungrammatical. Likewise, 5 out of the 10 irregular past tense items were grammatically correct and the other 5 were ungrammatical. Grammatical items contained past tense –ed in obligatory context and irregular verbs used correctly. 40 items were randomly arranged in the test. Participants were asked to indicate whether each sentence was grammatically correct or incorrect under no time pressure. The learners’ responses were scored as correct or incorrect.

<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Items of the Untimed Grammaticality Judgment Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target forms ($n = 20$)</td>
</tr>
<tr>
<td>Ungrammatical items ($n = 10$)</td>
<td>Past tense –ed omitted in obligatory context ($n = 5$)</td>
</tr>
<tr>
<td>Grammatical items ($n = 10$)</td>
<td>Past tense –ed used in obligatory context ($n = 5$)</td>
</tr>
<tr>
<td></td>
<td>i.e., Beth worked in a restaurant until 2000.</td>
</tr>
</tbody>
</table>
### TABLE 3

<table>
<thead>
<tr>
<th>Target forms</th>
<th>Regular past tense ($n = 8$)</th>
<th>Irregular past tense ($n = 8$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ungrammatical items ($n = 8$)</strong></td>
<td>Past tense -ed omitted in obligatory context ($n = 4$) i.e., She arrive here in 2000.</td>
<td>Irregular verbs regularized or regular ending on irregular stem ($n = 4$) i.e., A bird flewed into the house last night.</td>
</tr>
<tr>
<td><strong>Grammatical items ($n = 8$)</strong></td>
<td>Past tense -ed used in obligatory context ($n = 4$) i.e., It rained yesterday evening.</td>
<td>Irregular verbs used correctly ($n = 4$) i.e., Janie slept on the floor last night</td>
</tr>
</tbody>
</table>

The EOIT consisted of a set of 30 statements, involving both grammatically correct ($n = 15$) and incorrect sentences ($n = 15$) containing target structures. The test items consisted of 8 statements targeting regular past tense, 8 statements targeting irregular past tense, and 14 distractor statements. As can be seen in Table 3, 4 out of the 8 regular past tense items were grammatically correct and the other 4 items were ungrammatical. Likewise, 4 out of the 8 irregular past tense items were grammatically correct and the other 4 were ungrammatical. Each sentence was presented orally on an audiotape to the participants. The participants were then invited to indicate “whether they agreed with, disagreed with, or were not sure about the content of each statement” (Ellis, 2005, p. 156; Ellis et al., 2006, p. 355). This question was intended to focus the learners’ attention on meaning (Ellis, 2005, 2009b). After the question, the learners were required to repeat the sentences orally in correct English. The test was taken in a separate classroom and their responses were audio-recorded. In order to measure the difficulty of the pre- and posttests, a t-test was employed and the result indicated that there was no significant difference between the pretest and the posttest of the UGJT ($t = .55, p = .60$) and the EOIT ($t = .75, p = .48$). Therefore, the pretests and posttests were considered to be equally difficult tests.

### 5. Procedure

In this current study, three experimental groups and one control group followed the same procedure over a four-week period. Since this study conducted a pre- and posttest design in order to examine the improvement of their test scores, all of the groups took two pretests, the UGJT and the EOIT, one week prior to the beginning of treatment sessions.

After taking the UGJT, each group was invited to take the pre-EOIT. Since most students were not familiar with this test, the instructors provided sets of examples and showed how to take the test and how to respond to each statement provided by a native
English speaker. The participants were asked to listen to statements and required to respond to each statement under time pressure. The students’ responses were audio-recorded and transcribed.

One week after the pretests, three treatments were processed in the experimental groups and no treatment was provided in the control group. During the treatment sessions consisting of three 50-minute conversational tasks, each experimental group received either of metalinguistic feedback, recast, or elicitation while the control group received only positive evidence. An interview activity was used to elicit learners’ interaction on the first treatment day for 50 minutes. The students were assigned to pair groups and told to interview each other with questions for conversation. During the interviews, teacher asked additional questions related to the learners’ conversation and provided feedback on their ungrammatical utterances. Another task for the last two treatment days was a picture sequencing task, which required participants to interact while completing the task. The second task was performed three days after the first treatment and the third task was performed three days after the second. Each class was divided into four teams of two or three members and they were asked to order the sequence of three pictures containing the images that were extracted from animation, *The Simpsons*. The teams were told to order them, orally describe what happened to the character yesterday to their classmates. One week after the last treatment, all groups were invited to take posttests, which were designed to examine the improvement of the learners’ test scores.

6. Analysis

The learners’ responses to the UGJT were counted as correct (1 point) or incorrect (0 point). If learners didn’t mark on either correct or incorrect, the response was also counted as incorrect. For scoring the EOIT, if grammatically correct statement were correctly repeated or if ungrammatical statements were corrected, it was scored as 1. If the target form was not corrected, it was scored as 0. If the pronunciation of regular past tense –ed was not clear, the second and the third coders were invited to listen to the recorded responses. Based on the discussion with them, unclear responses were scored as 0. Reliability of the tests was calculated by means of Cronbach’s alpha.

Since the current study conducted a pre- and posttest design and intended to test the effect of group interactions, an analysis of covariance (ANCOVA) was carried out. With each pretest score as a covariate, ANCOVA was conducted to test the effect of group interactions and to show the extent to which group differences on the posttests were statistically significant. After ANCOVA was completed, a post-hoc LSD test was employed to show which group was significantly different from which group.
IV. RESULTS

1. Overall Effects of Prompts and Recasts

To explore the effects of feedback on pre-intermediate learner’s scores, the pre- and posttest results were presented in Table 4. Table 4 shows the mean scores and standard deviations of the pre- and posttest scores of the UGJT, the ungrammatical items of the UGJT, and the EOIT. The data indicated that the posttest scores of the experimental groups increased numerically, compared to their pretest scores. The descriptive statistics of L2 learners’ scores of the pre-UGJT showed that there was marginal difference among the pretest scores of the four groups. In the posttest scores, all of the groups showed the numerical increase in their scores. In the posttest scores of the UGJT ungrammatical items, all of the experimental groups showed the numerical increase in their test scores. In particular, the test score of the EG increased from 4.50 to 6.00, that of the MG increased 5.25 to 6.63, and that of the RG increased from 5.38 to 6.38.

Table 4 also the pre- and posttest scores of the EOIT. The groups receiving treatments earned numerically higher scores on the posttest than the CG. The RG scored 8.75, which was the highest among the groups. The MG scored 8.38, the EG scored 8.00, and the CG showed the lowest score, 7.57. The EG showed the numerically largest improvement among the groups and the RG showed the second largest improvement.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>UGJT</th>
<th>UGJT Ungrammatical Items</th>
<th>EOIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>Pretest</td>
</tr>
<tr>
<td>Recast</td>
<td>M</td>
<td>12.25</td>
<td>13.88</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.75</td>
<td>1.46</td>
</tr>
<tr>
<td>Metalinguistic</td>
<td>M</td>
<td>12.13</td>
<td>14.38</td>
</tr>
<tr>
<td>feedback</td>
<td>SD</td>
<td>2.47</td>
<td>2.13</td>
</tr>
<tr>
<td>Elicitation</td>
<td>M</td>
<td>11.25</td>
<td>13.63</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.25</td>
<td>1.69</td>
</tr>
<tr>
<td>No Treatment</td>
<td>M</td>
<td>12.43</td>
<td>12.71</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.81</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Note. UGJT = untimed grammaticality judgment test; EOIT = elicited oral imitation test
To investigate whether there were statistical differences on the posttest scores, ANCOVA was carried out. With each pretest score as a covariate, ANCOVA was conducted to test the effect of group interactions. The results of ANCOVA on the UGJT revealed that there was a significant difference among the groups on their posttest scores, $F = 7.437, p = .001$ (Table 5). The post-hoc test showed all treatment groups significantly differed from the CG but no difference was found among the treatment groups.

In addition, ANCOVA on the results from the ungrammatical items of the UGJT was conducted to show the extent to which group differences on the posttest were statistically significant. The analysis of ungrammatical items revealed the main effect of group, $F = 6.632, p = .002$ (Table 5). After ANCOVA was completed, the post-hoc test showed that all experimental groups significantly differed from the CG but no difference was found among the treatment groups. ANCOVA on the posttest scores of the EOIT showed no significant difference among groups.

2. L2 Learning of Regular and Irregular Past Tense

To explore the effects of treatments on pre-intermediate learner’s scores of each target form, the pre- and posttests focusing on each item were analyzed and presented in Table 6 and Table 7. The data in Table 6 shows the mean scores and standard deviations of the pre- and post-test scores of regular past tense from each group. Table 6 illustrates that the post-UGJT scores of all groups increased numerically, compared to their pretest scores. The MG showed the highest score on the posttest (7.50) and the CG showed the lowest score (6.14). As can be seen from the data presented in Table 6, the participants receiving feedback numerically increased their score of the ungrammatical items of the UGJT. The MG increased their scores from 2.50 to 3.38, the EG increased from 2.00 to 2.50, and the RG increased from 2.38 to 2.75. In contrast to the increase on the UGJT score of the CG, the group’s score of the ungrammatical items declined from 2.57 to 2.14.
The descriptive statistics of L2 learners’ scores of the EOIT showed that there was marginal difference among the pretest scores of the four groups. The posttest score of the MG and RG very slightly increased. As can be seen in Table 6, the CG showed the second greatest numerical improvement on the test score even though the group performed the lowest score in their posttests (3.29).

### TABLE 6

**Descriptive Statistics of Pretests and Posttests of Regular Past Tense**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>UGJT</th>
<th>Ungrammatical items</th>
<th>EOIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>Pretest</td>
</tr>
<tr>
<td>Recast</td>
<td>M 5.75</td>
<td>6.50</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>SD 1.04</td>
<td>1.20</td>
<td>0.74</td>
</tr>
<tr>
<td>Metalinguistic feedback</td>
<td>M 6.00</td>
<td>7.50</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>SD 1.51</td>
<td>1.41</td>
<td>1.07</td>
</tr>
<tr>
<td>Elicitation</td>
<td>M 5.38</td>
<td>6.38</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>SD 1.92</td>
<td>1.30</td>
<td>0.93</td>
</tr>
<tr>
<td>No Treatment</td>
<td>M 5.86</td>
<td>6.14</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>SD 1.57</td>
<td>1.46</td>
<td>1.27</td>
</tr>
</tbody>
</table>

To examine if different types of feedback affect L2 learning of regular past tense, the data of the target items in the UGJT, the ungrammatical items of the UGJT, and the EOIT was subjected to ANCOVA. The results of ANCOVA on the UGJT revealed that there was a significant difference among the groups on their posttest scores, $F = 2.900, p = .054$ (Table 8). The post-hoc test showed the MG significantly differed from the CG but no difference was found among the treatment groups. The analysis on the ungrammatical items also showed that there was a significant difference among the groups on their posttest scores, $F = 3.928, p = .019$, and the MG and EG significantly differed from the CG. No significant difference was found in the EOIT, $F = .020, p = .996$ (Table 8).

Table 7 describes the results of the descriptive statistics of students’ performance on the other target form, irregular past tense. The mean scores of the post-UGJT of the target item were analyzed. The MG scored 7.38, which was the highest score, while the CG scored 6.57, which was the lowest. All the groups increased their test scores except the CG, who showed the same score in both pre-and posttests (6.57). The EG performed the greatest improvement on the UGJT, the ungrammatical items, and the EOIT.
TABLE 7
Descriptive Statistics of Pretests and Posttests of Irregular Past Tense

<table>
<thead>
<tr>
<th>Treatment</th>
<th>UGJT Pretest</th>
<th>UGJT Posttest</th>
<th>Ungrammatical items Pretest</th>
<th>Ungrammatical items Posttest</th>
<th>EOIT Pretest</th>
<th>EOIT Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recast</td>
<td>M 6.50</td>
<td>7.38</td>
<td>3.00</td>
<td>3.63</td>
<td>4.50</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>SD 1.60</td>
<td>1.60</td>
<td>0.76</td>
<td>1.30</td>
<td>1.31</td>
<td>1.07</td>
</tr>
<tr>
<td>Metalinguistic  feedback</td>
<td>M 6.13</td>
<td>6.88</td>
<td>2.75</td>
<td>3.25</td>
<td>4.13</td>
<td>4.38</td>
</tr>
<tr>
<td></td>
<td>SD 1.46</td>
<td>1.25</td>
<td>0.71</td>
<td>1.04</td>
<td>1.36</td>
<td>1.19</td>
</tr>
<tr>
<td>Elicitation</td>
<td>M 5.88</td>
<td>7.25</td>
<td>2.50</td>
<td>3.50</td>
<td>3.75</td>
<td>4.38</td>
</tr>
<tr>
<td></td>
<td>SD 1.36</td>
<td>1.28</td>
<td>1.41</td>
<td>1.41</td>
<td>1.58</td>
<td>1.69</td>
</tr>
<tr>
<td>No Treatment</td>
<td>M 6.57</td>
<td>6.57</td>
<td>3.14</td>
<td>3.00</td>
<td>4.14</td>
<td>4.29</td>
</tr>
<tr>
<td></td>
<td>SD 0.98</td>
<td>0.79</td>
<td>1.21</td>
<td>1.15</td>
<td>1.21</td>
<td>0.76</td>
</tr>
</tbody>
</table>

TABLE 8
ANCOVA Summary on the Posttest Results of the Target Forms

<table>
<thead>
<tr>
<th>Form</th>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Past Tense</td>
<td>UGJT</td>
<td>6.212</td>
<td>3</td>
<td>2.071</td>
<td>2.900</td>
<td>.054</td>
</tr>
<tr>
<td></td>
<td>Ungrammatical items of UGJT</td>
<td>6.416</td>
<td>3</td>
<td>2.139</td>
<td>3.928</td>
<td>.019</td>
</tr>
<tr>
<td></td>
<td>EOIT</td>
<td>0.060</td>
<td>3</td>
<td>0.020</td>
<td>0.020</td>
<td>.996</td>
</tr>
<tr>
<td></td>
<td>UGJT</td>
<td>5.732</td>
<td>3</td>
<td>1.911</td>
<td>4.157</td>
<td>.016</td>
</tr>
<tr>
<td>Irregular Past Tense</td>
<td>Ungrammatical items of UGJT</td>
<td>3.938</td>
<td>3</td>
<td>1.313</td>
<td>1.580</td>
<td>.218</td>
</tr>
<tr>
<td></td>
<td>EOIT</td>
<td>1.166</td>
<td>3</td>
<td>0.389</td>
<td>0.430</td>
<td>.733</td>
</tr>
</tbody>
</table>

For analysis of achievement effects, ANCOVA was carried out on post-test achievement scores of the UGJT, the ungrammatical items of the UGJT, and the EOIT. The results of ANCOVA for the UGJT revealed that there was a significant difference among the groups on their posttest scores, \( F = 4.157, p = .016 \) (Table 8). The post-hoc test for the UGJT was employed and it further revealed that the RG and EG differed significantly from the CG. There was no significant difference among the groups on the ungrammatical items of the UGJT, \( F = 1.580, p = .218 \), and of the EOIT, \( F = .430, p = .733 \) (Table 8).

V. DISCUSSION

The research question of the current study concerned whether feedback that occurs
during interaction plays a role in L2 development of explicit and implicit knowledge. The purpose of the study was to explore which type of feedback provision is more beneficial for pre-intermediate learners to develop their explicit and implicit knowledge of the target forms, regular and irregular past tense. Adopting the techniques to measure explicit and implicit knowledge used by R. Ellis (2005) and Ellis et al. (2006, 2009), these experiments revealed that providing feedback had a positive effect on improving the test results. All types of feedback had significant effects on the UGJT and ungrammatical UGJT scores of the target forms, when compared to no treatment. The learners of the treatment groups receiving either type of feedback provision, recasts or prompts, performed better than those of the CG receiving only positive input. The results from the ungrammatical items of the UGJT, which have been considered as a better measure of explicit knowledge in previous research (R. Ellis, 2005; Ellis et al., 2006, 2009; Loewen, 2009), suggested that corrective feedback positively affected the development of explicit L2 knowledge of the past tense forms.

Leeman (2003) compared recasts, negative evidence, models, and control on learning Spanish noun-adjective agreement, and suggested that positive evidence have effect on L2 learning but negative evidence may not affect L2 acquisition. However, this present study reported a conflicting result of the suggestion. The finding of this study revealed that providing feedback, either recasts or prompts, during interaction is more effective on L2 learning of the target forms than giving only positive evidence. This finding supports Long’s Interaction Hypothesis (1996) suggesting that positive evidence is not sufficient and negative evidence is necessary for L2 learning. This finding is also consistent with previous studies about the benefits of feedback (Doughty & Varela, 1998; Long, Inagaki, & Ortega, 1998). They found the superiority of recasts over models. Mackey and Oliver (2002) and Iwashita (2003) showed a consistent finding that implicit negative feedback group performed better than no feedback group.

As reviewed in the literature, L2 learning of target forms is differently affected by feedback types (Varonisfardani & Basturkmen, 2009; Yang & Lyster, 2010). If L2 learning of different developmental structures is influenced by different types of feedback, then L2 learners who produce the non-targetlike forms might be more susceptible to a specific type of feedback on regular past tense and irregular past tense forms. To explore this possibility further, test items containing each form in the UGJT and the EOIT were analyzed. The findings showed that prompts were beneficial for improving the UGJT and ungrammatical UGJT scores of the regular past tense. Both elicitation and metalinguistic feedback showed statistically significant difference from no treatment in the ungrammatical UGJT items. As shown in Figure 1, the MG and EG showed the large improvement in the ungrammatical UGJT score while the CG declined its score. This finding indicates that providing prompts rather than recasts benefits for developing of explicit L2 knowledge on regular past tense.
The analysis on ungrammatical items in this study showed that recasts did not have a statistically significant effect on developing the regular past tense whereas metalinguistic feedback and elicitation revealed the effect on learning the form. This is consistent with other researchers’ claims about a distinctive advantage for metalinguistic feedback but less advantage of recasts (Ellis et al., 2006, 2009). However, the finding of this study is conflicting with that of Iwashita (2003) who found a larger impact of recasts on short-term L2 grammatical development. Varnosfadrani and Basturkmen (2009) reported that recasts, reformulation of the learners’ erroneous utterances, are more effective in helping learners learn the past tense forms of regular verbs. Their finding is also conflicting with that of the current study which found no significant effect of recasts on the erroneous regular past tense forms.

These inconsistencies are probably because prompts offer the L2 learners a chance to self-repair and the modified output enhanced their explicit knowledge of the form. This can be also explained in terms of noticing the gap between learners’ interlanguage and the target language. Noticing is fundamental in order to acquire an L2 language (Long, 1996, 2006) and plays a crucial role in L2 learning (Schmidt, 1995, 2001). Cho (2009) who investigated relationship between noticing and L2 learning found that noticing was correlated to L2 learning of the target morphological forms of English and L2 learners receiving either metalinguistic feedback or prompts were more likely to notice the target forms than those receiving recasts.

The analysis focusing on irregular past tense revealed different results from the same tests. The RG and EG were significantly different from no treatment group in the posttest score of the UGJT whereas the MG was not significantly different in the same test. The finding indicated that RG and EG might positively influence the development of explicit knowledge of the target form. The findings are consistent with previous researchers’
reporting that prompts and recasts had similar effects on accurate use of irregular past tense while prompts had larger effect than recasts had on accurate use of regular past tense (Yang & Lyster, 2010). However, the finding of this study is conflicting with that of Varnosfardani and Basturkmen (2009) who reported that the past tense forms of irregular verbs were more learned by metalinguistic explanation, the feedback process providing the learner with direct forms of feedback. This study showed inconclusive findings of the effectiveness of feedback on developing explicit knowledge of irregular past tense forms probably because of the small number of participants of each group and the relatively short period of the treatments.

Even though the current study found evidence of learning explicit knowledge of the target forms after prompts, in the data of this study no evidence was found that feedback might affect L2 learning of implicit knowledge of the target forms. This might be partially explained by learning difficulty of the target forms. McDonald (2006) pointed out that adult L2 learners had difficulties with the basic cognitive processes of memory and with some structures (e.g. regular past tense) compared to others (e.g. questions, word order). Inflectional endings (e.g. regular past tense morphology) seem to be more difficult in that learning the structures relied more on rule-based learning (Kemp & Bryant, 2003). Using the timed and untimed grammaticality judgment tests, the oral imitation test, and the metalinguistic knowledge test, Ellis (2006) measured implicit and explicit L2 grammatical knowledge of seventeen grammatical structures, which were all problematic to learners and found that learning difficulty was different depending on which type of knowledge was involved. For example, adverb placement and dative alternation had a moderately high implicit score and a low explicit score, indicating that the learners performed the structures better as implicit knowledge. In contrast, regular past tense had a high explicit score and a low implicit score and the difference between the implicit and explicit scores was large. The finding indicates that regular past tense is not an easy structure for L2 learners as implicit knowledge. This current study supported Ellis’s finding in that the regular past tense had a relatively high UGJT score and a low EOIT score. Ellis did not include irregular past tense but the results of this present study indicate that irregular past tense is also not easy in terms of implicit. The learners had more difficulty performing the target forms in the EOIT than those in the UGJT.

Another possibility can be explained by the test results of two participants of the CG. Their pretest scores of the EOIT were very low but their posttest scores were higher than most of the participants. It was probably because they didn’t understand how to response to the pretest of the EOIT despite the instruction before the test but later performed better because of the familiarity of the post EOIT.

In sum, these results suggested that prompts and recasts were beneficial for short-term L2 grammatical learning of EFL learners of pre-intermediate level of proficiency.
Especially prompts (i.e. metalinguistic feedback and elicitation) were likely to develop explicit knowledge of regular past tense and elicitation appeared to be effective in L2 learning of irregular past tense. The current study focused on regular and irregular past tense forms because L2 English learners already had L2 knowledge of the target forms but still produced non-targetlike forms. However, this study did not explore the learners’ perceptions of the target forms, which might affect the development of explicit knowledge of the forms. Further studies should attempt to identify the effect of individual learners’ perception of feedback which may influence the effect of feedback on the development of explicit and implicit knowledge. Another limitation is the relatively short period of treatments and the small number of participants of each group. For example, no statistically significant effect of feedback on explicit knowledge of ungrammatical irregular past tense forms was observed in the current study. Furthermore, no evidence was found that feedback could positively affect the development of implicit knowledge of the target forms. The period of the treatments of this study was 150 minutes for three days and it might be too short to observe the development of implicit knowledge. In addition, the number of participants of each group was insufficient to lead to a general conclusion about the role of prompts on developing explicit knowledge of the past tense forms. Therefore, the larger number of participants and a longer period of treatments should be included in further studies.

VI. CONCLUSION

To conclude, these experiments employed the untimed grammaticality judgment test and elicited oral imitation test to investigate whether prompts benefit more than recasts in developing explicit and implicit knowledge of past tense forms. The analysis showed L2 learners learned the past tense forms of regular and irregular verbs when prompts were provided. Thus, these experiments highlight the beneficial role of prompts and suggest that pre-intermediate learners of English could benefit from prompts provided during interaction when regular past tense forms are targeted. In EFL classroom, teachers’ prompts can help students attend their erroneous grammatical forms and develop their L2 explicit knowledge of the forms.

However, each group of this study had 8 or 7 students and because of the small sample sizes, the statistical power to detect the significance of the results of the present study is limited. Clearly, it will be important for future research to include more participants and data to find whether feedback facilitates the development of implicit knowledge and to identify the specific type of feedback that influence individual L2 learners’ perception. Finally, the current study employed two tests to measure explicit and implicit knowledge
of L2 students which Ellis et al. (2006, 2009), Ellis (2009b), Erlam (2009), and Loewen (2009) suggested. They found these tests were valid but little research has followed up on this matter. Further examination of these measurements should be followed to enhance the validity of the tests.

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Applicable levels: College level

Key words: prompts, recasts, explicit knowledge, implicit knowledge

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Relative Effects of Prompts and Recasts on the Development of Implicit and Explicit L2 Knowledge

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