Peer interaction and metacognitive instruction in the EFL classroom

Akiko Fujii, University of the Sacred Heart

Nicole Ziegler, University of Hawai’i at Mānoa

Alison Mackey, Georgetown University

**Abstract**

This chapter examines the effects of metacognitive instruction on the provision and use of interactional opportunities in learner-learner interactions in the task-based EFL classroom. Learners (*N* = 39) drawn from three intact speaking classes in an intensive academic EFL program were divided into a treatment group and a control group. Learners in both groups completed a pretest and posttest. The treatment group participated in a metacognitive instruction session, which demonstrated to learners the benefits of interactional feedback and presented tips and practice on how to provide feedback to their peers. Overall, findings indicate that metacognitive instruction led to greater provision and use of interactional feedback in subsequent interactions, and that learners recognized the benefits for their second language learning.

**Introduction**

As second and foreign language educators increasingly embrace “communicative” and “task-based” methods of language teaching, learner-learner interactions in the form of “pairwork” and “groupwork” are becoming more and more common in language learning classrooms (Adams, Nuevo, & Egi 2011; García Mayo & Pica 2000; Philp & Tognini 2009; Sato & Ballinger, 2016; Zhao & Bitchener 2007). Yet, despite seminal (Doughty & Pica 1986; Long & Porter 1985; Varonis & Gass 1985) and more recent empirical research (e.g., Adams 2007; Mackey, Oliver, & Leeman 2003) demonstrating that learner-learner interaction may facilitate second language (L2) learning, doubts exist about the practical effectiveness of learner-learner interaction in the L2 classroom, particularly in foreign language contexts (Philp & Tognini 2009). For instance, research has identified challenges in learner-learner interactions, with findings showing that they may result in lower frequency of negotiation (García Mayo & Pica 2000; Williams 1999) and less L2 development than teacher-learner interactions (Toth 2008). Although research has clearly demonstrated that interaction facilitates L2 development (see Keck, Iberri-Shea, Tracy-Ventura, & Wa-Mbaleka 2006; Mackey & Goo 2007; Ziegler in press for reviews), few studies have investigated the effects of explicit, metacognitive instruction on learners’ use and provision of interactional features (although see Kim & McDonough 2011; Sato & Ballinger 2012; Sato & Lyster 2012 for exceptions). This chapter addresses this gap in the literature by investigating whether learners can be explicitly taught to be better interactors and feedback providers, thereby maximizing their opportunities to positively benefit from interaction with their peers.

**Interaction and second language development**

The theoretical foundations for the benefits of interaction on L2 development have been established by a large body of research conducted over the course of the past two decades (Gass & Varonis 1994; Iwashita 2003; Leeman 2003; Loewen & Philp 2006; Mackey 2007; 2012; Mackey & Goo 2007; Mackey & Gass 2006; Mackey et al. 2003; Mackey & Oliver 2002; McDonough 2007). Previous empirical studies, as well as meta-analyses (Keck et al. 2006; Li 2010; Lyster & Saito 2010; Mackey & Goo 2007; Russell & Spada 2006), have indicated that interaction plays a facilitative role in L2 development by providing learners with opportunities to receive modified comprehensible input and interactional feedback, to produce output, and to notice gaps between their interlanguage and the target language features through negotiation for meaning (Mackey 2012; Mackey, Abbuhl, & Gass 2012; Mackey & Gass 2006). These negotiations, which include conversational moves such as comprehension checks, confirmation checks, and clarification requests made in response to failures in communication, can lead to interactional adjustments by a more competent interlocutor, thus facilitating acquisition through the “connection of input, internal learner capacities, particularly selective attention, and output in productive ways” (Long 1996: 451-452). The feedback that learners receive during these negotiations for meaning can crucially direct their attention to mismatches between interlanguage and target language features.

Interaction also provides opportunities for learners to produce modified output, which is an essential aspect of L2 development as it provides learners with opportunities to improve fluency and to test hypotheses about the target language (Gass & Mackey 2006; Long 1996 2007; Mackey & Gass 2012; Swain 1985, 1995, 2005). In addition, research has demonstrated that interaction benefits are not limited to the laboratory setting, but apply in the classroom as well (Ellis 2007; Gass, Mackey, Ross-Feldman 2005; Keck et al. 2006; Mackey 2006; Mackey & Goo 2007; McDonough 2004). However, previous research has also suggested that the effects of interaction on L2 development may be influenced by differences in interlocutor, setting, and context (Mackey & Goo 2007; Sheen 2004).

**Feedback in peer interaction**

Numerous studies during the last three decades have specifically investigated learner-learner interaction. The results of such studies have demonstrated that learner-learner interaction can be rich in interactional modifications, such as negotiation for meaning, modified output, and feedback (Bruton & Samuda 1980; García Mayo & Pica 2000; Long & Porter 1985; Pica, Lincoln-Porter, Paninos, & Linnell 1996; Sato & Lyster 2007; Varonis & Gass 1985; Zhao & Bitchener 2007) (Also see Sato & Ballinger 2016 and Philp, Adams, & Iwashita 2014 for more discussion). For example, negotiation in learner-learner interactions has been linked to negative feedback, a crucial process in language development. Mackey et al. (2003) compared native-speaker (NS)-learner interactions with learner-learner interaction in an ESL setting with reference to recasts and negotiation moves, such as confirmation checks and clarification requests, which occurred specifically in response to non-target-like utterances. In other words, they examined the occurrence of negotiation moves that functioned as negative feedback. Findings indicated that negative feedback was indeed provided by learners in learner-learner interaction in response to more than 30% of non-target-like utterances for both adult dyads and child dyads. Results also showed that NSs provided more negative feedback than learners did in adult dyads. However, adult learner-learner dyads produced more opportunity for modified output, and child learner-learner dyads produced more modified output. Similar results of increased modified output production in learner-learner interaction compared to learner-NS interactions were also found in a study of EFL learners by Sato and Lyster (2007), whose findings demonstrated that learner-learner dyads provided more elicitation feedback than native speaker interlocutors. Finally, Adams (2007) examined the relationship between negative feedback and L2 learning in ESL learner-learner interactions and found that almost 60% of all feedback episodes resulted in learning the linguistic issues involved. However, Adams’ findings also indicated that learners may provide each other with inaccurate feedback, lending support to previous research (García Mayo & Pica 2000).

Furthermore, studies have found that the quantity and quality of interactional feedback in classrooms may be variable and may be task or setting-dependent. In a study of information gap tasks carried out in in an ESL setting, Foster (1998) found wide individual variation in the quantity of learner negotiation, including a lack of negotiation by many of the participants. Based on these findings, Foster argued “‘negotiation for meaning’ is not a strategy that language learners are predisposed to employ when they encounter gaps in their understanding” (Foster 1998: 1). Foster and Ohta (2005) suggest that the low frequency of negotiation in Foster’s (1998) study may be due to the fact that negotiation for meaning may be face-threatening and frustrating for learners. However, Gass, Mackey, and Ross-Feldman (2005) came to a different conclusion based on their data also collected in ESL classroom and laboratory settings, suggesting that task effects were more important than contextual differences.

**Peer interaction and foreign language contexts**

Limitations in adult peer interaction have been pointed out specifically with respect to English as a foreign language contexts (EFL), particularly in non-immersion settings where L2 input opportunities are often limited (Fujii & Mackey 2009; García Mayo & Pica 2000; McDonough 2004; Philp & Tognini 2009). For instance, in McDonough’s (2004) examination of pair and group activities in a Thai EFL context, she found that only those learners who were highly participatory in feedback and modified output episodes benefited from the interaction. Learners may also fail to negotiate or provide feedback due to shared cultural beliefs, such as the need to avoid face-threatening linguistic behavior (Sato & Lyster 2007). For example, Fujii and Mackey (2009) investigated learner-learner interactions in a Japanese EFL context, finding that learners provided a relatively low rate of interactional feedback, possibly due to learners’ shared cultural background. Studies have also demonstrated that learners from varied cultural backgrounds may be hesitant to provide feedback because they feel their interlocutors may find it socially inappropriate (Mackey et al. 2003). However, as Philp and Tognini (2009) suggest, despite these challenges, foreign language classrooms, where time and L2 exposure are limited, are exactly the kind of contexts where interaction is a valuable resource for learning. These learners may need direct instruction or preparation in order to participate actively and benefit fully from task-based language teaching (see also Mackey et al. 2013).

**The learner’s role in learning**

The implementation of interactive tasks in the L2 classroom assumes a learner-centered approach to learning (Willis & Willis 2008). Development is driven by learners’ efforts to achieve mutual understanding (Long 1996), and such interaction stimulates the unfolding of the learners’ internal syllabus (Robinson 2001) by providing samples of language that learners can incorporate into their interlanguage when they are developmentally ready. In addition, Samuda (2001) has discussed the role of the learners themselves in shaping whether a task results in knowledge construction or skill practice. In other words, as Philp and Mackey (2011) point out, learners are active participants in their own learning process.

Empirical studies have investigated learners’ perceptions about interaction from a wide range of perspectives, ranging from whether learners notice corrective feedback (Mackey, Gass, & McDonough 2000) to their perceptions about the role that social and personal factors play in peer interaction (Philp & Mackey 2011). Research has also examined the connection between learners’ perceptions about interaction, their task performance, and resulting L2 development. For example, Mackey (2006) investigated 28 adult English as a second language (ESL) learners’ noticing of feedback, target features, and L2 development, eliciting their perceptions through journals, stimulated recalls, and questionnaires. Results indicated a positive relationship between learners’ noticing of interactional feedback and their resulting L2 development, with learners who reported greater levels of noticing demonstrating greater improvements in their use of question forms. Egi (2007) also examined the relationship between learners’ perceptions and their subsequent L2 development, with findings indicating that learners who had interpreted recasts as negative and positive evidence had significantly higher scores on posttests than learners who interpreted recasts as meaning-focused responses.

In addition, studies have demonstrated that learners may benefit more from interaction if they are actively involved in negotiation (Mackey 1999), and that positive attitudes towards tasks may lead to improved willingness to communicate (Dörnyei & Kormos 2002), suggesting that learners’ perceptions impact their participation in interactional tasks and therefore affect their opportunities to benefit from interactional processes. Mackey (2002) examined the extent to which learners’ perceptions of interaction overlapped with researchers’ claims, finding that learners’ insights consistently corresponded to empirical claims surrounding comprehensible input, modified output, corrective feedback, and hypothesis testing. Overall, these findings suggest that learners’ perspectives may play an important role in their use and provision of interactional opportunities and the developmental and social benefits they stand to gain.

Furthermore, it may be possible to improve their overall engagement and effectiveness in interactions by providing them with explicit instruction on interactional features and processes.

**Targeted instruction**

Recent studies have reported on efforts to instruct or train learners to improve their opportunities for learning through interaction. In a study of collaborative learning in interactive tasks, Kim and McDonough (2011) found that the quality of interaction was better with learners who had viewed models of collaborative learning prior to engaging in the task compared to learners who had not viewed the models. Mackey and Fujii (2009) provided an intact class of Japanese EFL learners with instruction on how to be more effective interactors. Following a presentation on the benefits of interaction, learners participated in a classroom-based picture-description task. Findings indicated a slight improvement in learners’ rates of interactional feedback following training, suggesting that some learners might become better interlocutors when directly told about the benefits of interaction. Their findings suggest that direct instruction may be beneficial to learners’ overall use of interaction in a variety of settings and contexts.

Sato and Lyster (2012) examined the impact of corrective feedback training on Japanese EFL learners’ second language development. Learners in the experimental groups were trained to give corrective feedback in response to their partners’ errors. Results indicated that the learners in the corrective feedback groups significantly improved on measures of accuracy and fluency, while the interaction-only group demonstrated greater gains in fluency than the control group. These findings suggest that learners’ L2 development may improve as a result of training in corrective feedback. In addition, Sato (2013) reports that the training had a positive impact on learners’ trust in their peers as learning resources, and in their willingness and confidence to provide each other with corrective feedback. Thus, these studies demonstrate the benefits of training learners to provide their peers with corrective feedback. There is a need for additional classroom research examining the impact of instruction on other interactional factors, such as negotiation for meaning and modified output opportunities.

Ballinger (2013) also reported on a study on learner training, which was conducted in the context of an English-French immersion classroom at the elementary school level and involved two intact classes. Both classes received instruction on the use of peer language learning strategies in interactional tasks. Quantitative and qualitative analyses examined the audio recordings of the learners’ interactions for instances of pair collaboration, or language-related episodes (LREs), which can be defined as learners’ implicit or explicit discussions regarding their or their interlocutors’ language use and strategy use, including instances of corrective feedback. Findings suggest that although corrective feedback provision may encourage enhanced language awareness, its effectiveness was mitigated by the lack of collaboration or cooperation within learner pairs, with feedback provision sometimes leading to missed development opportunities rather than L2 learning. Sato and Ballinger (2012) suggested that these results provide evidence for the effectiveness of combining language awareness training with training for improved peer collaboration in order to improve learners’ L2 development.

Although these studies suggest that learners’ L2 development may improve as a result of training in the provision and use of interactional feedback during oral and written peer interactions, more research is necessary to further our understanding of how instructors can maximize learning opportunities through explicit training in conversational interaction. Previous research has established the benefits of interaction and negotiation for meaning on L2 development (for reviews, see Keck et al. 2006; Mackey & Goo 2007); however, the role learners themselves play in these learning processes remains unclear. As many teachers are already aware, learners often fail to negotiate over non-target-like utterances, thus missing out on the potential benefits of interaction. Although this is a common enough issue in ESL and EFL contexts, the research has not adequately addressed if and how instructors might improve learners’ interactional abilities through explicit training.

**The current research**

This study focuses on how learners in classroom contexts might become better interlocutors by raising their awareness of the quality of their interactions. In other words, this study examines whether raising learners’ awareness of their provision and use of interactional features through metacognitive instruction improves learner engagement in interactive tasks.

The following research questions were addressed:

1. How does metacognitive instruction affect learners’ provision and use of interactional opportunities?
2. What do learners’ reports suggest about their perceptions of metacognitive instruction and its effects on their language learning?

**Method**

*Methodological framework*

This quasi-experimental study conducted in an authentic classroom setting employed a pretest-treatment-posttest design in order to examine the effect of task-based metacognitive instruction on learners’ provision and use of interactional feedback. The study was carried out within the framework of interactionist research (Mackey 2007; 2012). Data consisted of transcripts of learners’ task-based interactions before and after the treatment session, which were coded following Mackey, Oliver, and Leeman (2003) for (a) instances of interactional feedback, (b) opportunities for learners to modify their output in response to the feedback provided by their peers, and (c) instances where learners actually modified their output in response to the feedback they received from their peers. These data were supplemented by learners’ reports on perceptions about their learning, which were analyzed using a qualitative approach.

*Participants*

Participants were 39 learners from three intact classes in an intensive academic English program at a private university in Tokyo, Japan. Of these 39 learners, 13 were men and 26 were women. The learners were all native speakers of Japanese in their first year of university study with a mean age of 18.6 years. The learners began studying English at a mean age of 11, which is the age when English education usually begins in schools in Japan. They were placed in the low-intermediate level of the program (the lowest of three levels) based on an in-house placement test administered at the beginning of the term. The TOEFL scores for this level ranged from 377-513, with an average score of 463. The participants in one of the three intact classes were assigned to a control group (*n* = 16), and participants in the other two intact classes were assigned to a single treatment group (*n* = 23). Because data collection was conducted during regular class periods, data was initially collected from all of the learners present. The number of participants reported here represent the learners for whom there were complete data sets. The academic speaking courses maintained an English-only policy during class, and the overall instructional methodology of the intensive language program followed a communicative, task-based approach. Since the tasks and instruction for the current research were conducted as part of the regular course curriculum, participants were not paid for their participation.

*Materials*

*Tasks*

The pretests and posttests consisted of tailor-made interactive tasks and others adapted from previous research (Ur 1981). Two types of information gap tasks were used as pretests and posttests. One task was a picture difference task in which learner dyads were given two different versions of a picture (each learner had a different version) and asked to identify differences between the pictures. The second task was a problem-solving task. In this task, learners were each given one half of a comic strip depicting a mystery. The task was to exchange information about the pictures in order to solve the mystery. Information gap tasks were selected because previous studies suggest that required information exchange results in more negotiation (Ellis 2006; Foster 1998). The two different types of information gap tasks were selected in order to represent both closed outcome tasks, such as the picture-difference task, which may result in short, lexical exchanges, as well as conversational tasks, such as the picture-sequencing task, that may result in longer expressions of opinion. Previous research has demonstrated that these contrasting task types elicit different patterns of negotiation (Duff 1986; Nakahama, Tyler, & Van Lier 2001). The picture difference tasks were adopted from *Discussions that Work* (Ur 1981), while the problem-solving tasks were created based on stories from an internet mystery story website *MysteryNet’s Kids Mysteries*. Different versions of both types of information gap tasks were used on the pretest and posttest, with the pretest consisting of a different picture difference task and problem-solving task than the posttest.

*Metacognitive instruction session*

The four-part instructional session was titled “How to be an active learner: Feedback, negotiation, and noticing,” and delivered by the first author who was introduced to the class as a guest speaker. The instruction was conducted using PowerPoint slides all in English following the English-only policy in the program.

1. Explanation: Since the learners all came from a common background of form-based language instruction, the presentation began with an introduction of the characteristics and benefits of communicative, meaning-focused language. After discussing the advantages and disadvantages of communicative language learning, specifically the concern that it may lead to development in fluency but not necessarily accuracy or complexity, the presenter explained how negotiation processes could facilitate the development of learners’ accuracy and complexity.

2. Examples: The second phase of the instruction provided learners with examples of successful interactions. Negotiation processes were illustrated using video clips of a Japanese learner carrying out a decision-making task with an instructor. This video was supplemented with transcripts highlighting the negotiation processes, thereby providing support for both visual and aural learners. One of the slides used to highlight negotiation processes in the transcript is shown in Figure 1.

3. Useful phrases: The third phase presented learners with several phrases that could be used to elicit clarification or confirmation or for giving recasts, such as ‘so you mean…’ or ‘I’m sorry, I don’t understand’.

4. Practice: The final phase of the instruction session provided learners with one guided practice activity and one practice activity in learner-learner dyads. During this phase, the whole class completed a picture-difference task together, guided by the instructor, who initiated negotiation, modeled a variety of feedback moves, and also created contexts for the learners to initiate negotiation. Then, learners practiced a similar task in learner-learner dyads.

*Exit questionnaire*

The written exit questionnaire (Appendix A) consisted of 13 items designed to elicit learners’ perceptions and evaluation of the instructional session. The questionnaire was administered in the learners’ first language, Japanese. Learners were asked to rate their responses on a five-point Likert scale ranging from a score of one, “I strongly disagree,” to a score of five, “I strongly agree.”

*Procedure*

Data were collected during learners’ regularly scheduled academic speaking class during two 70-minute class periods (referred to here as Session 1 and Session 2), which took place within the space of one week. For both the pretest and posttest, learners were given five minutes to carry out the picture-difference task and 10 minutes to carry out the problem-solving task. All interactions, which the learners completed in self-selected learner-learner dyads, were audio-recorded using portable digital audio-recorders. Learners worked with the same partner throughout the duration of the study except in unavoidable circumstances such as absence. Learners were accustomed to the English-only policy enforced across the program and therefore no Japanese was used in the classroom even during peer interaction.

*Treatment group*

Learners in two intact classes were assigned to the treatment group. During Session 1, they participated in the pretest, which was immediately followed by the four-part metacognitive instruction session described above. Session 2 began with a review of the metacognitive instruction. Following the review, participants completed the posttest, which consisted of different versions of the same type of tasks used during the pretest. Finally, learners carried out exit questionnaires that asked learners to recall and record what they had been thinking during the pretest and posttest tasks. All learners carried out the tasks with the same partners for both the pretest and the posttest. In order to mitigate the possibility of the Hawthorne effect, which suggests that participants might alter their behavior in a favorable way due to their being part of a research study, the instruction and tasks were carefully structured to follow the design and implementation of regular task-based class activities.

*Control group*

 Learners assigned to the control group (one intact class) participated in the same pretest and posttest tasks as the treatment group. However, instead of receiving the task-based metacognitive instruction, they participated in regular class activities. In addition, the control group participants did not complete exit questionnaires. Figure 2 illustrates the procedure of the study.

*Analysis*

Data analyses were carried out using both quantitative and qualitative approaches. Quantitative measures addressed the effects of metacognitive instruction on the amount of feedback learners provided in response to their interlocutors’ non-target-like utterances, as well as the amount of modified output opportunities and actual instances of learners’ modified output. Qualitative measures investigated participants’ experiences and perceptions about instruction from a more holistic perspective.

All audio recordings of learners’ pretest and posttest tasks were transcribed. Following Mackey, Oliver, and Leeman (2003), learner utterances were first coded as target-like or non-target-like in order to identify contexts of interactional feedback provided in response to erroneous utterances. Because this study focused on learners’ provision of interactional feedback, only responses to non-target-like utterances were included in the analyses. Interlocutors’ responses to erroneous utterances were then categorized according to the type of feedback provided. Clarification requests, confirmation checks, and recasts were operationalized following previous research (Mackey et al. 2003; Fujii & Mackey 2009). Examples taken from the current study illustrate the types of feedback that were coded in the analyses:

(1) Clarification request

Learner 1 yea, book. Book and uh..string?

Learner 2 what?

Learner 1 string…ball

(2) Confirmation check

Learner 1 How many dots your picture?

Learner 2 You mean how many arrows?

Learner 1 Yes.

(3)　Recast

　Learner 1 Found the broken glass.

　Learner 2 window.

　Learner 1 broken window.

Next, interactions were coded for modified output opportunities and the production of modified output. If an interlocutor provided feedback and then gave an opportunity for the reformulation of the original utterance, by pausing or hesitating in order to provide the interlocutor with an opportunity to respond, this was categorized as a modified output opportunity. Example 4 from the data illustrates an opportunity for modified output.

(4)　Opportunity for Modified output

　　Learner 1 and the last scene, the left fishing boy said house, said house and

sandwich, there is a house sandwich.

　　　　　Learner 2 House sandwiches?

In this example, Learner 2 asks for clarification, but instead of continuing, pauses and provides an opportunity for Learner 1 to reformulate the original utterance. Learner utterances immediately following feedback and modified output opportunities were then coded for the production of modified output that corrected or clarified the original utterance. Modified output is illustrated in Example 5 below.

(5) Modified output

Learner 1 Levine work something in in his uh old chair.

Learner 2 What you mean? Work in his chair?

Learner 1 Work something..mm…write..write something.

Learner 2 Oh write. Ok.

In sum, these analyses examined the amount of interactional feedback, modified output opportunities, and resulting modified output that learners provided in response to non-target-like utterances. Inter-rater reliability was calculated with a second rater on 25% of the data set with a simple percentage agreement of 95%. Alpha levels were set at .05, and in light of the small sample size, exact significance values are reported for all statistical tests.

Qualitative analyses were carried out on the exit questionnaire data to obtain a more holistic view of learners’ perceptions and use of interactional feedback, as well as their opinions of the experience of the metacognitive instruction and how it might be related to their learning outcomes.

**Results**

The first research question addressed how providing metacognitive instruction on interaction would affect learners’ provision and use of interactional opportunities. Since the data did not meet assumptions for normality underlying parametric statistics, Mann-Whitney *U-*tests were conducted to examine whether differences in the amount of feedback provided in response to non-target-like utterances between the control and treatment groups were significant over time. Results indicate that the different gain scores in the raw amount of feedback were significant across the treatment and control groups, *U* = 324, *p* < .001, with the control group providing an average of 8.25 (*SD* = .63) instances of feedback in response to non-target-like utterances during the pretest and 5.06 (*SD* = .74) during the posttest and the treatment group providing an average of 3.60 (*SD* = .53) instances of feedback in response to non-target-like utterances during the pretest and 5.70 (*SD* = .62) instances during the posttest.

However, since raw counts of feedback may be misleading, to obtain a more accurate measurement of the amount of feedback produced in relation to non-target-like utterances, ratio percentage scores of feedback in the context of all non-target-like utterances were also subjected to Mann-Whitney *U-*tests, which indicated that the gain scores in the amount of feedback provided relative to the number of erroneous utterances was significantly different between the treatment and the control group, *U* = 288, *p* = .002. In the control group, feedback was provided an average of 14.68% (*SD* = 5.58) of the time in response to non-target-like utterances during the pretest and 11.38% (*SD* = 6.37) of the time during the posttest. For the treatment group, feedback was provided an average of 9.30% (*SD* = 5.53) of the time in response to non-target-like utterances during the pretest and 16.14% (*SD* = 10.19) during the posttest.1

 Overall, these findings, as is shown in Figure 3, indicate that gains by learners in the treatment group were significantly higher in terms of the amount of feedback they provided in response to their interlocutor's non-target-like utterances when compared with gains in the amount of feedback provided by learners in the control group.

Following the examination of quantity of feedback, analyses examining the quality of feedback were carried out. In other words, analyses then focused on the type of interactional feedback provided in response to non-target-like utterances. Mann-Whitney *U-*tests indicated that the gains in the treatment group were significantly greater than the gains in the control group in terms of provision of clarification requests, *U* = 257, *p* = .037. However, differences were not significant for confirmation checks, *U* = 239.5, *p* = .114, or recasts, *U* = 133.5, *p* = .151. Table 1 provides the descriptive statistics for the types of feedback for the treatment and control groups.

Next, analyses examining the provision of modified output opportunities were carried out. Gains in raw modified output opportunities differed significantly between the treatment and control groups, *U* = 289, *p* = .002. Although there was a clear difference in the mean of actual modification of output from pre to posttest for the treatment group, which can be seen in Figure 4, statistical analyses did not suggest that these differences were significant across groups, *U* = 240, *p* = .114. Table 2 illustrates the trends in the raw numbers of learners’ provision of modified output opportunities and the amount of modified output produced in response to these opportunities. However, since raw numbers do not take into account the possibility that learners may have more frequently modified output in relation to the opportunities they received, the proportion of learners’ modified output to provided modified output opportunities was also examined. For the treatment group, learners produced modified output 47.97% (*SD* = 38.66%) of the time in response to modified output opportunities during the pretest, while learners in the control group produced modified output in response to 45.07% (*SD* = 26.31%) of the provided modified output opportunities. On the posttest, learners in the treatment group produced modified output for 48.18% (*SD* = 29.05%) of the modified output opportunities, while the control group learners produced modified output 56.63% (*SD* = 23.22%) of the time. Mann-Whitney *U*-tests indicate that gains in modified output produced in relation to the provided modified output opportunities was not significant across groups, *U* = 167, *p* = .641.

The second research question examined learners’ perceptions about metacognitive instruction and its impact on their language learning outcomes. Exit questionnaires collected from 22 out of the 23 learners in the treatment group were analyzed. Calculations of mean responses for each of the items indicated that learners generally “agreed” or “strongly agreed” with statements about understanding the purpose, benefits, and potential applications of interactional features and corrective feedback, as shown in Table 3 (see Appendix A for the questionnaire). Learners reacted positively to the instruction, with 19 out of 22 “agreeing” or “strongly agreeing” that they understood the concepts of negotiation, feedback, and noticing as a result of the training. The findings indicate that learners felt they understood how negotiation and feedback might both contribute to language learning, as well as improve their understanding of why it is important to provide feedback during conversational interactions.

Additionally, responses to the open-ended questions showed that eight of the 22 learners stated that they would use what they learned in the workshop in their other English classes. Five of the 22 learners stated that they would use what they learned in the workshop in situations where they use English, including in study abroad situations and daily conversations, indicating that a portion of the learners were able to see beyond the classroom to the benefits of the instruction for authentic, real-world applications.

*Summary of results*

Significant differences between the gain scores of the treatment and control groups were found in the amount of overall interactional feedback in response to non-target-like utterances as a result of metacognitive instruction on the provision and use of interactional features. When feedback was examined by type, results showed that learners in the treatment group experienced significantly greater gains than the control group in their use of clarification requests. Additional analyses confirmed differences in the amount of learners’ modified output opportunities and actual instances of learners’ modified output. The treatment group experienced significantly greater gains for modified output opportunities, with trends in actual modified output being noted, although they were not statistically significant.

Exit questionnaires revealed that learners reacted positively to the instruction, with mean responses indicating that learners understood the concepts, learning benefits, and potential applications of negotiation and interactional feedback.

**Discussion**

*Metacognitive instruction and learner interaction*

Learners in this study were positively impacted by metacognitive instruction via task-based interaction in a number of ways, with the treatment group demonstrating an increase in the provision of interactional feedback, specifically clarification requests and modified output opportunities. In other words, learners in this group provided more feedback in response to non-target-like utterances, and provided each other with more opportunities for modified output. These results demonstrate that even a brief metacognitive instructional session like the one provided here can lead learners to become more productive providers of certain types of interactional feedback. Given that interactional feedback is associated with L2 development (Keck et al. 2006; Mackey & Goo 2007), it seems logical that if learners become more successful at providing each other with interactional feedback, they may increase their opportunities for L2 development.

As previous studies have indicated that learner-learner interactions may result in low instances of learner-generated feedback (García Mayo & Pica 2000; Fujii & Mackey 2009; Porter 1986), these results are particularly encouraging, suggesting that instructing learners in the ‘hows’ and ‘whys’ of interaction may improve both their ability and willingness to provide interactional feedback and modified output opportunities. These results also lend further support to recent research stating that learners can be trained to be ‘better’ interactors (Mackey & Fujii 2009) and ‘better’ corrective feedback providers (Sato & Ballinger 2012; Sato & Lyster 2012). In particular, the notion of becoming a better interactor has implications for learning during a variety of classroom activities and also extends beyond the classroom to learning in naturalistic settings.

*Learner-learner**interaction*

The results also shed some light on several challenges existing in learner-learner interaction. For example, although the quantity of learner-provided feedback increased after the instructional session, the overall amount of negotiation and interactional feedback is still relatively low when considered in terms of the amount of non-target-like utterances. Learners in the control group provided feedback approximately 15% of the time on the pretest and 11% of the time on the posttest in response to their interlocutors’ non-target-like utterances, while learners in the treatment group provided feedback approximately 9% of the time on the pretest and 16% of the time on the posttest. Although Mackey (2007) has suggested that the quality (in other words, the timing of interactional feedback, both in relation to learners’ developmental levels and the flow of the discourse) is more important than the overall quantity of interactional feedback, it is important to consider the current findings in light of previous research. For example, Mackey et al. (2003) reported the provision of learner feedback on interlocutors’ non-target-like utterances as 30%, suggesting that the current results, although they provide encouraging evidence for metacognitive training, might still be considered low when compared to this benchmark. However, the contexts of these studies differ, and it is important to consider the factors that may have impacted learner-learner interaction in the current study.

It remains unclear exactly why the learners in the control group produced less feedback in the posttest than in the pretest. Research has suggested that the success of corrective feedback and interaction can be influenced by a myriad of factors, including teacher and student classroom dynamics (Batstone & Philp, 2013) and social or affective factors such as proficiency differences between learners, motivation, or in their attitudes to the tasks (Burrows 2008; Philp & Tognini 2009; Yoshida 2008). In the case of the control group for the current study, the pretest and posttest resulted in a sequence of task repetition separated by time. It could be that this repetition served to decrease the need for negotiation and/ or was simply a demotivating factor. In other words, it is possible that a decrease in negotiation is a natural tendency in the classroom when tasks are repeated, a point that only highlights further the benefits of explicit instruction about the importance of interactional feedback. Of course, further empirical research is needed in order to gain more insight into such trends.

In addition, the results of the study suggest that instructional sessions may also need to address learners’ affective concerns, such as encouraging and supporting learners who seem shy in initiating negotiation or providing feedback in order to maximize the efficacy of metacognitive instruction. For example, the responses from the exit questionnaire showed that not all learners felt confident in their ability to actually give feedback to their peers. One learner stated that he felt he was unable to “teach grammar” to his interlocutor, while two other learners said that the tasks were difficult to discuss due to issues in grammar and vocabulary, thereby preventing them from providing feedback during the interaction. These comments lend further support to previous research findings that suggest learners’ perceptions about proficiency differences (Yoshida 2008) and attitudes towards providing peer feedback (Philp, Walter & Basturkmen 2010; Sato 2013; Watanabe & Swain 2007) play a role in their willingness and ability to provide feedback during interactions. Although learners may possess the linguistic resources to adequately provide interactional feedback, their perceptions about their proficiency may prevent them from providing feedback or participating in negotiations with their interlocutor, highlighting the need for more time and/or more practice for learners to be able to put into action what they have understood at a metacognitive level.

In addition, the relatively low rates of learners’ provision and use of feedback during peer interaction may be due to the focus, duration, and intensity of the metacognitive training session. Previous research has suggested that in order to alter learners’ approaches to peer interaction, training is needed to not only raise learners’ linguistic awareness, but also to improve peer collaboration (Sato & Ballinger, 2012). Although the current study indicates that even a single metacognitive training session might lead to an increase in negotiation and feedback, intensive training sessions conducted over an extended period of time may lead to greater and more sustained gains. Multiple training sessions would provide learners with additional practice in giving and receiving feedback, as well as offer opportunities for the creation of a more supportive social learning environment, thereby potentially increasing the positive benefits of metacognitive training for learner-learner interaction.

*Feedback and negotiation*

Another point relates to the low quantity of recasts observed in the data. This is not an entirely unexpected result, as these learners were all at the low-intermediate level and may not have had the linguistic abilities necessary to provide recasts. This trend is also in line with other studies of peer interaction. Fujii and Mackey (2009) also found a low quantity of recasts in their study with EFL Japanese learners. In a comparison of learner-NS and learner-learner interaction Sato and Lyster (2007) found that only 30% of feedback in peer interaction were recasts, in contrast to 59% in learner-NS interaction. Interestingly, two learners did comment in the questionnaire that they did not feel there were many opportunities to learn grammar. In the current study, learners were instructed to resolve problems in communication, rather than to focus on their partners’ linguistic errors and give recasts, as was the case in the studies conducted by Sato (Sato & Ballinger 2012; Sato & Lyster 2012). According to their exit questionnaires, learners indicated a neutral response (*M* = 3.42) to the statement that they had noticed more language, including errors and new expressions, in the interactions following the instruction. Thus, it appears that giving recasts, which requires attention to grammar, and knowledge of target-like forms, is a challenge for learners, especially at the lower proficiency levels. It may be that more focused training or more extended training is a necessary condition for a higher quantity of recasts.

Furthermore, negotiation is a learning opportunity that can be extended to contexts outside of the classroom (Sato 1986). Thus, it is especially noteworthy that, as reported above, some of the learners reported in their exit questionnaires their intention to apply what they had learned in the instructional session to other English classes and to other situations where they use English. Overall then, this study suggests that teaching learners about negotiation, feedback, and noticing may provide them with the tools necessary to be better learners through interaction in other contexts where they are in contact with English.

*Limitations*

Although this study provides interesting information regarding the effects of metacognitive instruction, it is necessary to acknowledge several limitations. The generalizability of the results is also limited, as this study used a relatively small sample size from a single, academic context. Learners in other EFL or ESL environments may react differently, and further research is necessary to investigate the effects of metacognitive instruction in novel contexts. Learner proficiency may also have affected the results, particularly with regard to the provision of recasts. In order for learners to be able to provide a corrected reformulation of an interlocutor’s utterance successfully, they must have knowledge of the correct grammatical or lexical form. For these low-intermediate learners, their language proficiency may not have allowed this level of interactional feedback, resulting in a lower provision of recasts compared to comprehension checks and clarification requests. Future research may wish to examine learners with more advanced language proficiency, as the instruction may potentially be more effective with more advanced learners.

Finally, the tasks used in this study were not designed to elicit a particular target feature, but rather, to provide learners with an environment in which to practice and build their interactional skills. Future research could consider the use of more targeted tasks in order to examine the impact of metacognitive instruction on the development of a wide range of L2 skills. In addition, particularly as previous research has suggested that learners may benefit from training sessions with greater intensity and longer duration (e.g. Sato & Ballinger, 2012), studies using repeated instruction over a longer period of time should be conducted to further our understanding of the long-term effects of metacognitive instruction on learners’ interactional skills and L2 development.

**Conclusion and pedagogical implications**

Overall, this short-term, small-scale study has demonstrated that providing learners with metacognitive instruction in the ‘why’, ‘what,’ and ‘how’ of interaction led to quantitatively increased use and provision of interactional strategies in subsequent interactions. In addition, the introspective data indicated that the learners both understood and enjoyed the instruction, suggesting that a metacognitive instruction component may be a useful and welcome addition to ESL and EFL classrooms. These findings may have important pedagogical implications, as they suggest that learners can be trained to be better providers of negotiation and interactional feedback, thus increasing their potential to benefit from interactional opportunities over time. These results provide useful information to instructors wishing to improve learners’ engagement in task-based interactions in the foreign language classroom, and make important contributions to the considerations involved in task-based teaching curricula. Finally, this study highlights the role that learners themselves can play in their own learning process, particularly their ability to improve their provision and use of interactional feedback. However, further research is necessary to develop a greater understanding of the influence and benefits of metacognitive instruction on learner interactions and second language development.

**Notes**

1. The medium sized standard deviation (10.19%) seen in the posttest results of the treatment group suggests that there was a wider range of variability in the use and provision of interactional features when compared to the pretest results of those of the control group. Although the majority of learners in the treatment group fell within 5%-6% of the mean, three learners provided feedback over 30% of the time in response to their interlocutors non-target-like utterances, with one learner offering feedback on 45.45% of their partner’s errors. This variation suggests that the impact of the instructional session may have differentially affected some learners.

**References**

Adams, R. (2007). Do second language learners benefit from interacting with each other? In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp. 29-51). Oxford: Oxford University Press.

Adams, R., Nuevo, A., & Egi, T. (2011). Explicit and implicit feedback, modified output, and SLA: Does explicit and implicit feedback promote learning and learner–learner interactions? *The Modern Language Journal, 95*, 42-63.

Ballinger, S. (2013). Towards a cross-linguistic pedagogy: Biliteracy and reciprocal learning strategies in French immersion. *Journal of Immersion and Content-Based Language Education, 1(1),* 131–148.

Batstone, R., & Philp, J. (2013). Classroom interaction and learning opportunities across time and space. In K. McDonough & A. Mackey (Eds.), *Second Language Interaction in Diverse Educational Contexts* (pp.109-125)*.* Amsterdam: John Benjamins.

Bruton, A., & Samuda, V. (1980). Learner and teacher roles in the treatment of oral error in group work. *RELC Journal*, *11*, 49-63.

Burrows, C. (2008) An evaluation of task-based learning (TBL) in the Japanese classroom. *English Today, 24*, 11-16.

Dörnyei, Z., & Kormos, J. (2002). *Motivational determinants of the quality and quantity of student performance in communicative language tasks.* Paper presented at the annual meeting of the American Association of Applied Linguistics, Salt Lake City, UT.

Doughty, C., & Pica, T. (1986). “Information gap” tasks: Do they facilitate second language acquisition? *TESOL Quarterly, 20*, 305-325.

Duff, P. (1986). Another look at interlanguage talk: Taking task to task. In R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 147-81). Rowley, MA: Newbury House.

Egi, T. (2007). Recasts, learners’ interpretations, and L2 development. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp. 249-268). Oxford: Oxford University Press.

Ellis, R. (2006). Researching the effects of form-focused instruction on L2 acquisition. *AILA Review,* *19*, 18-41.

Ellis, R. (2007). The differential effects of corrective feedback on two grammatical structures. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp. 339-360). Oxford: Oxford University Press.

Foster, P. (1998). A classroom perspective on the negotiation of meaning. *Applied Linguistics*, *14*, 1-23.

Foster, P., & Ohta, A. S. (2005). Negotiation for meaning and peer assistance in second language classrooms. *Applied Linguistics, 26*, 402-430.

Fujii, A. & Mackey, A. (2009). Interactional feedback in learner-learner interactions in a task-based EFL classroom. *International Review of Applied Linguistics, 47*, 267-301.

García Mayo, M., & Pica, T. (2000). Interaction among proficient learners: Are input, feedback and output needs addressed in a foreign language context? *Studia Linguistica*, *54*, 272-279.

Gass, S. M., & Mackey, A. (2006). Input, interaction, and output: An overview. *AILA Review*, *19*, 3-17.

Gass, S., Mackey, A., & Ross-Feldman, L. (2005). Task-based interactions in classroom and laboratory settings. *Language Learning, 55*, 575-611.

Gass, S., & Varonis, E. (1994). Input, interaction, and second language production. *Studies in Second Language Acquisition, 16*, 283-302.

Iwashita, N. (2003). Negative feedback and positive evidence in task-based interaction. *Studies in Second Language Acquisition, 25*, 1-36.

Keck, C. M., Iberri-Shea, G., Tracy-Ventura, N., & Wa-Mbaleka, S. (2006). Investigating the empirical link between task-based interaction and acquisition: A meta-analysis. In Norris, J.M. & Ortega, L. (Eds.), *Synthesizing Research on Language Learning and Teaching* (pp. 91–131). Amsterdam: John Benjamins.

Kim, Y. J., & McDonough, K. (2011). Using pretask modelling to encourage collaborative learning opportunities. *Language Teaching Research, 15*, 183-199.

Leeman, J. (2003). Recasts and second language development. *Studies in Second Language Acquisition, 25*, 37-63.

Li, S. (2010). The effectiveness of corrective feedback in SLA: A meta-analysis. *Language Learning, 60,* 309-365.

Loewen, S., & Philp, J. (2006). Recasts in the adult English L2 classroom: Characteristics, explicitness, and effectiveness. *The Modern Language Journal*, *90*, 536-556.

Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413-468). San Diego: Academic Press.

Long, M. H., & Porter, P. A. (1985). Group work, interlanguage talk, and second language acquisition. *TESOL Quarterly, 19*, 207-228.

Lyster, R., & Saito, K. (2010). Oral feedback in classroom SLA: A meta-analysis. *Studies in Second Language Acquisition, 32, 2*65-302.

Mackey, A. (1999). Input, interaction, and second language development. *Studies in Second Language Acquisition, 21,* 557–587.

Mackey, A. (2006). Feedback, noticing and instructed second language learning. *Applied Linguistics, 27*, 405–430.

Mackey, A. (2007). Introduction: The role of conversational interaction in second language acquisition. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp. 1-26). Oxford: Oxford University Press.

Mackey, A. (2012). *Input, interaction, and corrective feedback in L2 learning.* Oxford: Oxford University Press.

Mackey, A., Abbuhl, R., & Gass, S. (2012). Interactionist approach. In S. Gass & A.

Mackey (Eds.), *The Routledge handbook of second language acquisition* (pp. 7-24). New York: Routledge.

Mackey, A. & Fujii, A. (2009). *Training learners to be more effective interactors.* 3rd Biennial Conference on Task-Based Language Teaching. Lancaster, UK.

Mackey, A., Fujii, A., Biesenbach-Lucas, S., Weger-Guntharp, H., Jacobsen, N.D., Fogle, L., Lake, J., Sondermann, K., Tagarelli, K., Tsujita, M., Watanabe, A., Abbuhl R., & Kim, K. (2013). Tasks and tradition practice activities in a foreign language context. In K. McDonough & A. Mackey (Eds.), *Second Language Interaction in Diverse Educational Contexts* (pp. 71-87)*.* Amsterdam: John Benjamins.

Mackey, A., & Gass, S. (2006). Pushing the methodological boundaries in interaction research: An introduction to the special issue. *Studies in Second Language Acquisition, 28*, 169-178.

Mackey, A., & Gass, S. (2012). Research methods in second language acquisition: A practical guide. Chichester, West Sussex. Blackwell

Mackey, A., Gass, S., & McDonough, K. (2000). How do learners perceive interactional feedback? *Studies in Second Language Acquisition, 22,* 471–497.

Mackey, A., & Goo, J. (2007). Interaction research in SLA: A meta-analysis and research synthesis. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp. 407-452). Oxford: Oxford University Press.

Mackey, A., & Oliver, R. (2002). Interactional feedback and children’s L2 development. *System*, *30*, 459–477.

Mackey, A., Oliver, R., & Leeman, J. (2003). Interactional input and the incorporation of feedback: An exploration of NS-NNS and NNS-NNS adult and child dyads. *Language Learning*, *53*, 35-66.

McDonough, K. (2004). Learner-learner interaction during pair and small group activities in a Thai EFL context. *System*, *32*, 207–224.

McDonough, K. (2007). Interactional feedback and the emergence of simple past activity verbs in L2 English. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp*.* 323–338). Oxford: Oxford University Press.

Mystery Net: The Online Mystery Network (2009). *MysteryNet’s Kids Mysteries*. Retrieved from http://kids.mysterynet.com/quicksolve/

Nakahama, Y., Tyler, A., & Van Lier, L. (2001). Negotiation of meaning in conversational and interaction gap activities: A comparative discourse analysis. *TESOL Quarterly, 35*, 377-405.

Philp, J., Adams, R., & Iwashita, N. (2014). *Peer interaction and second language learning*. New York: Routledge.

Philp, J., & Mackey, A. (2011). Interaction research: What can socially informed approaches offer to cognitivists (and vice versa)? In R. Batstone (Ed.), *Sociocognitive aspects of second language learning and teaching.* Oxford: Oxford University Press.

Philp, J., & Tognini, R. (2009). Language acquisition in foreign language contexts and the differential benefits of interaction. *International Review of Applied Linguistics in Language Teaching, 47*, 245-266.

Philp, J., Walter, S., & Basturkmen, H. (2010). Peer interaction in the foreign language classroom: What factors foster a focus on form? *Language Awareness, 19*, 261-279.

Pica, T., Lincoln-Porter, F., Paninos, D., & Linnell, J. (1996). Language learners‘ interaction: How does it address the input, output, and feedback needs of L2 learners? *TESOL Quarterly*, *30*, 59-84.

Porter, P. (1986). How learners talk to each other: Input and interaction in task-centered discussions. In R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 200-222). Rowley, MA: Newbury House.

Robinson, P. (2001). Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied Linguistics, 22*, 27-57.

Russell, J. & Spada, N. (2006). The effectiveness of corrective feedback for the acquisition of L2 grammar: A meta-analysis of the research. In J. Norris & L. Ortega (Eds.), *Synthesizing research on language learning and teaching* (pp. 133-164). Amsterdam, NE: John Benjamins.

Samuda, V. (2001). Guiding relationships between form and meaning during task performance: The role of the teacher. In M. Bygate, P. Skehan, & M. Swain (Eds.), *Researching pedagogic tasks* (pp. 119-134). London: Longman.

Sato, C. J. (1986). Conversation and interlanguage development: Rethinking the connection. In R. Day (ed.) *Talking to learn*. Rowley, MA: Newbury House. 237-326.

Sato, M. (2013). Beliefs about peer interaction and peer corrective feedback: Efficacy of classroom intervention. *The Modern Language Journal, 97*, 611-633.

Sato, M., & Ballinger, S. (2012). Raising language awareness in peer interaction: A cross-context, cross-method examination. *Language Awareness, 20*, 157-179.

Sato, M., & Ballinger, S. (2016). Understanding peer interaction: An overview of the research. In M. Sato & S. Ballinger (Eds.), *Peer interaction and second language learning: Pedagogical potential and research agenda.* Amsterdam: John Benjamins.

Sato, M., & Lyster, R. (2007). Modified output of Japanese EFL learners: Variable effects of interlocutor vs. feedback types. In A. Mackey (Ed.), *Conversational interaction in second language acquisition: A collection of empirical studies* (pp. 123-142). Oxford: Oxford University Press.

Sato, M., & Lyster, R. (2012). Peer interaction and corrective feedback for accuracy and fluency development: Monitoring, practice, and proceduralization. *Studies in Second Language Acquisition*, *34*, 591-626.

Sheen, Y. (2004). Corrective feedback and learner uptake in communicative classrooms across instructional settings. *Language Teaching Research, 8,* 263-300.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Rowley, MA: Newbury House.

Swain, M. (1995). Three functions of output in second language learning. In G. Cook & B. Seidlhofer (Eds.), *Principle and practice in applied linguistics: Studies in honour of H. G. Widdowson* (pp.125-144). Oxford: Oxford University Press.

Swain, M. (2005). The output hypothesis: Theory and research. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 471-483). Mahwah, NJ: LawrenceErlbaum.

Toth, P. D. (2008). Teacher- and learner-led discourse in task-based grammar instruction: Providing procedural assistance for L2 morphosyntactic development. *Language Learning,* *58*, 237–283.

Ur, P. (1981). *Discussions that work: Task centered fluency practice.* Cambridge: Cambridge University Press.

Varonis, E. M., & Gass, S. (1985). Miscommunication in native/nonnative conversation. *Language in Society, 14*, 327-343.

Watanabe, Y., & Swain, M. (2007). Effects of proficiency differences and patterns of pair interaction on second language learning: Collaborative dialogue between adult ESL learners. *Language Teaching Research, 11*, 121-142.

Williams, J. (1999). Learner-generated attention to form. *Language Learning, 49*, 583–625.

Willis, D., & Willis, J. (2008). *Doing Task-based teaching.* Oxford: Oxford University Press.

Yoshida, R. (2008). Learners' perception of corrective feedback in pair work. *Foreign Language Annals, 41*, 525-541.

Zhao, S. Y., & Bitchener, J. (2007). Incidental focus on form in teacher–learner and learner–learner interactions. *System, 35*, 431-447.

Ziegler, N. (in press). Synchronous computer-mediated communication and interaction: A meta-analysis. *Studies in Second Language Acquisition.*

Table 1

*Types of feedback provided in response to non-target-like utterances*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Control (*n*=16) |  | Treatment (n=23) |
|  | Pretest | Posttest |  | Pretest | Posttest |
| Group | *M* | *SD* | *M* | *SD* |  | *M* | *SD* | *M* | *SD* |
| Clarification requests | .81 | .91 | .75 | 1.00 |  | .61 | .89 | 1.57 | 1.38 |
| Comprehension checks | 6.63 | 2.47 | 3.00 | 1.79 |  | 2.61 | 2.21 | 3.48 | 2.06 |
| Recasts | .81 | 1.38 | 1.31 | 1.08 |  | .39 | .50 | .48 | .73 |

Table 2

*Modified output in response to non-target-like utterances*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Control (*n*=16) |  | Treatment (n=23) |
|  | Pretest | Posttest |  | Pretest | Posttest |
| Group | *M* | *SD* | *M* | *SD* |  | *M* | *SD* | *M* | *SD* |
| Opportunities for modified output | 6.63 | 2.75 | 4.63 | 1.78 |  | 2.61 | 1.83 | 4.38 | 2.84 |
| Modified output provided | 3.19 | 2.20 | 2.50 | 1.15 |  | 1.43 | 1.59 | 2.09 | 1.78 |

Table 3

*Exit questionnaire items with mean score of four or higher on a five-point scale.*

|  |  |  |
| --- | --- | --- |
| Questionnaire Item | *Mean* | *S.D.* |
| 1. I understood the concepts of negotiation, feedback, and noticing. | 4.19 | .68 |
| 2. I understood how negotiation, feedback, and noticing contribute to learning English. | 4.05  | .59 |
| 3. I was able to get an idea of how to give feedback. | 4.00  | .77 |
| 8. I think negotiation, feedback, and noticing are useful for improving my English.  | 4.28  | .78 |
| 9. Specifically, negotiation, feedback, and noticing are useful for improving my ability to explain my thoughts. | 4.29  | .64 |
| 12. I think I will use what I learned in this workshop in the future | 4.00  | .65 |

Example (1)

Hiro: I think that… to arrive oasis…

Teacher: to what? you think…? **🡨clarification question**

Hiro: to arrive oasis

Teacher: Oh, to arrive at the oasis **🡨restate correctly (recast)**

Hiro: yeah, oasis **🡨NOTICE and corrects**

*Figure 1.* Sample slide from metacognitive instruction session.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Treatment Group(*n*=23) |  | Control Group(*n*=16) |
|  |  |  |  |  |
| Session One |  | Informed consent and pretest |
|  |  |  |  |
|  | Metacognitive instruction |  | Regular class activities |
|  |  |  |  |  |
| Session Two |  | Review of metacognitive instruction |  | Regular class activities |
|  |  |  |  |
|  | Posttest |
|  |  |  |  |
|  | Exit Questionnaires |  |  |

*Figure 2.* Procedure of the current research.

*Figure 3.* Percentage of non-target-like utterances provided with feedback.

*Figure 4*. Mean amount of modified output produced by learners in response to modified output opportunities.

Appendix A

Questionnaire (translated from the original Japanese)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Questions | strongly agree | agree |  | disagree | strongly disagree |
| １ | Through the power point presentation, I understood the concepts of negotiation, feedback, and noticing. | 5 | 4 | 3 | 2 | 1 |
| ２ | Through the power point presentation, I understood how negotiation, feedback, and noticing contribute to learning English.  | 5 | 4 | 3 | 2 | 1 |
| 3 | Through the power point presentation, I was able to get an idea of how I could give feedback.  | 5 | 4 | 3 | 2 | 1 |
| 4 | I was able to give my partner more feedback after the workshop than before the workshop.  | 5 | 4 | 3 | 2 | 1 |
| 5 | I engaged in more negotiation after the workshop than before the workshop.  | 5 | 4 | 3 | 2 | 1 |
| 6 | I noticed more feedback from my partner after the workshop than before the workshop.  | 5 | 4 | 3 | 2 | 1 |
| 7 | I noticed more of my own errors, as well as new expressions or language in my production and in my peers, after the workshop than before the workshop.  | 5 | 4 | 3 | 2 | 1 |
| 8 | I think negotiation, feedback, and noticing are useful for improving my English.  | 5 | 4 | 3 | 2 | 1 |
| 9 | Specifically, do you think negotiation, feedback, and noticing are useful for improving the following aspects of your English?  Very useful 　　Not useful at all Fluency 5 4 3 2 1  New vocabulary 5 4 3 2 1  Accurate grammar 5 4 3 2 1  Explaining my thoughts 5 4 3 2 1  Clear pronunciation 5 4 3 2 1  Listening 5 4 3 2 1  Learning new grammar 5 4 3 2 1  |
| 10 | If you answered “I disagree” “I strongly disagree” or “Not at all useful” to the two questions above, please explain why.  |
| 11 | What were some especially effective aspects of the content or organization of the workshop? Were there any points that should be improved?  |
| 12 | I think I will use what I learned in this workshop in the future.  | 5 | 4 | 3 | 2 | 1 |
| 13 | If you answered “I agree” or “I strongly agree” in what context do you think you will use what you learned? If you answered “I disagree” or “I strongly disagree, ” explain why.  |