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Examining the Effects of Metacognitive Instruction in Oral Communication for EFL Learners

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This study investigated the effects of metacognitive instruction in oral communication for EFL learners over a semester. Participants ($N = 58$) were sampled from four oral communication classes in a private university in the western part of Japan where the researcher had been working as an English instructor. They were freshmen whose majors were not English. The treatment group ($n = 28$) received metacognitive instruction in oral communication (i.e., they were taught how to improve oral communication skills and how to become more autonomous learners through metacognitive processes as well as activities such as planning, monitoring, and reflecting). The contrast group ($n = 30$), taught by the same teacher, did not receive metacognitive instruction although they used the same textbooks and materials and had more time for interaction in English. Results of the questionnaire (SRLQ, the Self-Regulated Learning in Oral Communication Questionnaire, Kobayashi, 2016a) showed that students in the treatment group became more self-regulated learners. Moreover, it was found that the treatment group made greater gains in interactional competence, regulation of cognition, cognitive strategies and interaction strategies. Furthermore, it was verified that learners with low interactional competence in the treatment group benefited the most from such metacognitive instruction.

Keywords: classroom research, EFL learners, oral communication, metacognitive instruction, learner autonomy

Introduction

English has become a global language (Crystal, 2003). Interacting with others in English as a common language is vital to communicate and build rapport. To establish rapport, interactional skills are important and for face-to-face communication, interactional skills are essential. However, regarding their speaking ability, Japanese English language learners were the lowest in rank among Asian countries (ETS, 2018). The average speaking score on the TOEIC IP Speaking and Writing test of Japanese university students ($N = 7,051$) is 97.6 (ETS, 2019), which means they cannot interact with each other freely without preparation. However, since Japanese university students study English in the English as a Foreign Language (EFL) environment, it may be difficult to develop interactional competence. Interaction is not a solo act, so to acquire interactional competence in English requires us to interact with each other in English. Therefore, it is important for EFL learners to have opportunities to interact with each other and to develop such competence. However, merely giving opportunities to interact with would not be sufficient in helping learners improve interactional competence because students who are studying in an EFL (English as Foreign Language) environment such as Japan often do not have a clear goal of learning English and they do not necessarily see the importance of learning English (e.g., Sampson, 2016; Yashima, 2000). In such a context, they may end up interacting with each other in Japanese or remain

silent. In such a context, it is important to promote learner autonomy so that they can self-regulate to achieve their goals (e.g., Aoki & Nakata, 2011) so that they can become more autonomous learners (e.g., Kobayashi, 2016b, 2018) and understand why interactional competence is important and what to do to improve such competence (e.g., Goh, 2008).

Autonomous learners and self-regulated learners are similar in a way that they both have goals and try to achieve them by monitoring, evaluating, modifying or setting new goals again and acting to achieve them (Kobayashi, 2017). Autonomy is executed when learners set goals, reflecting on their own learning processes, try to achieve their goals, monitor, and evaluate their own learning processes (Holec, 1979; Kobayashi, 2017). These capacities such as setting goals by reflecting on their own thoughts critically, monitoring their own progress, and evaluating their own learning processes are metacognition. Since these capacities such as setting goals, monitoring, and evaluating are metacognition, autonomous learners do not exist without metacognition (Gao & Zhang, 2011). Metacognition is our mental capability. It enables us to sense our progress when we comprehend our thoughts and to use that awareness in our mental activities (Zull, 2011). Therefore, to help learners become more self-regulated learners or autonomous learners, it is important to stimulate metacognition (Takeuchi, 2010).

Literature Review

Metacognition

Although there are a plethora of perspectives on the construct of metacognition (Veenman, Van Hout-Wolters, & Afflerbach, 2006), many researchers agree that metacognition consists of these two: metacognitive knowledge and metacognitive skills (e.g., Flavell, 1979; Goh, 2008; Schraw, Crippen, & Hartley, 2006). Metacognitive knowledge contains knowledge about learners (e.g., their motivation, strength and weakness), knowledge about goals and nature of the tasks, and strategy knowledge (e.g., what they are, how and when they are used, and why they are used). Metacognitive skills include skills such as planning, monitoring, and evaluating (Goh, 2008).

Principles of metacognitive instruction

The following principles are useful for planning effective metacognitive instruction as it can create a continuous cycle of learning (Veenman et al., 2006, p. 9):

1. Embedding metacognitive instruction in the content matter to ensure connectivity
2. Informing learners about the usefulness of metacognitive activities to make them exert the initial extra effort
3. Prolonged training to guarantee the smooth and maintained application of metacognitive activity

Vandergrift and Goh (2012) propose a metacognitive pedagogical sequence for developing awareness of listening and metacognitive knowledge. This metacognitive sequence includes five stages: 1. Pre-listening (Planning/predicting stage), 2. First listen (First verification stage), 3. Second listen (Second verification stage), 4. Third listen (Final verification stage), and 5. Reflection and goal-setting stage. They also propose metacognitive activities, which provide learners with opportunities to enrich their learning through peer dialog and cooperation from a socio-cultural perspective (e.g., Kozulin, 2003; Lantolf & Thorne, 2006). This pedagogical sequence and metacognitive activities help listeners to become self-regulated listeners.

Research in metacognitive instruction in oral communication

Although very few studies on metacognitive instruction in oral communication have been conducted, several researchers have examined the effectiveness of metacognitive instruction in listening classes in both English as a Second Language (ESL) and EFL contexts (e.g., Chen, 2010; Cross, 2011; Goh & Taib, 2006; Graham & Macaro, 2008; Fahim & Fakhri Alamdari, 2014; Rahimi & Katal, 2013; Vandergrift & Tafaghodtari, 2010). Research shows that: (1) learning strategies (including metacognitive strategies) influence learning outcomes and self-efficacy (Graham & Macaro, 2008; Rahimi & Katal, 2013); (2) Metacognitive instruction influences listening comprehension (Cross, 2011; Goh & Taib, 2006; Vandergrift & Tafaghodtari, 2010); (3) Metacognitive instruction is effective especially for less skilled listeners (e.g., Cross, 2011; Kobayashi, 2018); (4) Metacognitive instruction affects learning outcomes (Goh & Taib, 2006); and (5) Metacognitive instruction improves metacognitive awareness, perceived use of listening strategies, and speaking ability (Rahimi & Katal, 2013).

To date, several metacognitive instruction studies (e.g., Cross, 2011; Vandergrift & Tafaghodtari, 2010) have involved a metacognitive pedagogical sequence and discussions. Fahim and Fakhri Alamdari (2014) also involved a metacognitive pedagogical sequence and dialogic interactions. They found that the learners who received dialogic interactions outperformed their peers who underwent the linear instruction of metacognitive strategies regarding their listening comprehension ability. They suggested that dialogic interactions helped learners move from other-regulation to self-regulation from a socio-cultural perspective and suggested that metacognitive instruction through dialogic interaction can be helpful to guide learners in developing their listening comprehension and help them regulate their own learning.

Rahimi and Katal (2013) also involved a metacognitive pedagogical sequence of listening and discussions. Those learners who received such an intervention improved their metacognitive awareness, perceived use of listening strategies, and speaking ability. Although they improved listening comprehension, the improvement was not to a level of statistical significance. The researchers explained that their enhanced strategy use and metacognitive awareness helped them to minimize speech production planning time and as a result they improved their speaking ability.

In oral communication (OC), a study conducted by Nakatani (2005) suggests that those students who were involved with the metacognitive training noticed the importance of communication strategies, which led to more use of achievement strategies and they improved their OC. In his study, the participants ($N =$ 62) were 18 and 19–year–old Japanese private college students. The control group received explicit strategy training and was encouraged to engage in metacognitive activities. They used a strategy diary to plan, monitor, and evaluate their performance. The training consisted of a five-phase instructional sequence: review, presentation, rehearsal, performance, and evaluation.

These previous research results resonate with the previous research findings. Research conducted by Kobayashi (2012, 2014, 2016b) shows that metacognitive instruction (MI) in OC classes affects self-efficacy and strategy use. Kobayashi (2016b) examined a metacognitive instruction model conducted in Japan to investigate the impact of MI on students' metacognition, self-efficacy, interaction strategies, and oral communication. The participants in the study were Japanese sophomores who attended an OC course for three months. They were guided to develop their metacognitive knowledge and metacognitive skills regarding OC. Their pre- and post-questionnaire answers and their pre- and post-OC test grades were analysed using structural equation modelling. Results showed that after the intervention the path from strategy use to OC scores was significant. Two causal relationships were also strengthened: (a) between metacognition and strategy use and (b) between metacognition and self-efficacy. These findings suggest that activated metacognition (students were guided to set goals, monitor, and reflect on their performance, using goal-setting and reflection sheets regularly) can lead to more effective learning and metacognition and self-efficacy are highly correlated. However, her research lacked a contrast group. Besides, there are very few studies on MI in OC. Therefore, the current study aims to examine the impact of metacognitive instruction on students' metacognition, self-efficacy, strategy use, and interactional competence by having a contrast group. It attempts to examine how students changed their metacognition,

self-efficacy, strategy use, and interactional competence after undergoing metacognitive instruction in the oral communication class.

Research Questions

To achieve these research purposes above, the present study was guided by the following three research questions:

1. Does metacognitive instruction improve students' interactional competence?
2. How does metacognitive instruction influence students' metacognition, self-efficacy, strategy use, and interactional competence?
3.
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o learners with low interactional competence in the treatment group show a greater improvement in interactional competence than learners with high interactional competence?

Method

Participants

The participants were university EFL students (*N* = 58) from four oral communication classes. Non-English-major EFL students were chosen because previous research (e.g., Sampson, 2016; Yashima, 2000) suggests that they are often not aware of why they need to improve their English and how to improve their English and those learners potentially benefit the most from metacognitive instruction.

The participants consisted of two cohort groups of the treatment group (*n* = 28) and contrast group (*n* = 30) who attended separate courses in two consecutive years, in 2018 and 2019, over a semester. In order to see that the participants were evenly distributed between the two groups, a *t*-test was conducted. Table 1 below shows the number of participants of each group, in addition to the mean and standard deviation of L2 interactional competence for treatment and contrast groups and results of *t*-tests. As can be seen in Table 1, the result of the *t*-tests on pre-interactional competence and pre-English proficiency test showed that there were no significant differences between the two groups (*t* = -0.249, *p* = .21, *r* = -.03), which indicate that both groups were evenly distributed as to their initial interactional competence and English proficiency. According to Cohen's (1988) guidelines, *r* = .10 is a small effect size and *r* = .30 is a medium effect size. Judging from the small effect size, *r* = .03, we can conclude that the two groups' initial English proficiency was similar. The initial English proficiency was measured using an Eiken pre-second test, which will be described later in detail.

TABLE 1
Results of t-test, Means, Standard Deviations for Pre-English Proficiency

	Treatment Group (*n* = 28)	Contrast Group (*n* = 30)		
	M (SD)	*M (SD)*	*p*	*r*
Pre-English proficiency	12.2 (3.3)	12.0 (4.1)	.21	.03

As can be seen in Table 2, the result of the *t*-test on pre-interactional competence showed that there were no significant differences between the two groups (*t* = -1.42, *p* = .30, *r* = .19), which indicates that both groups were evenly distributed as to their initial interactional competence. Judging from the small effect size, *r* = .19, we can conclude that the two groups' initial interaction competence was similar. How the initial interactional competence was measured will be described later in detail.

TABLE 2
Results of t-test, Means, Standard Deviations for Pre-interactional competence

	Treatment Group (*n* = 28)	Contrast Group (*n* = 30)	*p*	*r*
	M (SD)	*M (SD)*		
Pre-interactional competence	4.64 (1.4)	4.13 (1.3)	.30	.19

The same instructor taught both groups over a semester and collected the data. Both groups had similar characteristics: (a) they had a 90-minute English lesson once a week as elective courses; (b) they were all non-English majors, studying English as a foreign language; (c) their main aim for the course was to improve their speaking and listening skills in English; (d) the English textbooks that they were using were *Interchange level 1 student's book with online self-study* (Richards, Hull, & Proctor, 2017) and both groups used the same materials; and (e) the textbooks that they used were for improving students' communicative ability in English.

Data Analysis

To obtain descriptive statistics, (a) the participants' pre- and post-interaction competence and (b) their pre- and post-questionnaire answers were analyzed quantitatively using *t*-test and repeated measures ANOVA. In addition, students' interview data were analyzed qualitatively to understand results further. The following sections describe them in detail.

Tests

In order to measure their initial English proficiency, English proficiency tests were conducted using an Eiken pre-second test. Cronbach's alpha obtained by SPSS 25.0 was .54 (33 items). The Cronbach's alphas obtained can be said to be reliable (Takeuchi & Mizumoto, 2014).

OC proficiency tests

Participants' OC proficiency data were obtained to link the outcome of their learning with their actual performance: They were tested for OC proficiency at the beginning of the course and approximately three months later at the end of the course. Fluency, accuracy, and attitude were measured holistically as oral communication proficiency. Each participant was assigned a number from 1 to 4 for each of the three areas. Table 3 below shows the coding rubric used to score oral communication performance.

TABLE 3
Coding Rubric for OC Performance

Characteristics	1 = *poor*			4 = *very good*
Accuracy	1	2	3	4
Fluency	1	2	3	4
Attitude	1	2	3	4

A native speaker of English who had been teaching oral communication also assessed the data. Considering time constraints, task difficulty, and established convention (Révész, 2012), approximately twenty percent of the participants' pre- and post-OC proficiency test data were assessed individually. The rater was not given any information about the candidates' English proficiency. The inter-rater reliability estimated by Cronbach's alpha was .80, an acceptable level of reliability.

The personal information exchange task was chosen because it activates interaction. The previous study also used the same task (Kobayashi, 2016b). These four casual conversation topics were chosen: (a)

What do you do in your free time?; (b) *Do you have any plans for this weekend?*; (c) *What are you doing this weekend?*; and (d) *What's your hobby?* The participants in each class received different topic cards, so there was no information leak between classes regarding the test topic (i.e., no one could know the test topic before the test). All the topics required basic vocabulary and grammar, and the level of difficulty was carefully checked by English language teachers. The OC tests were paired tests (i.e., two individuals were paired and each participant was assigned OC scores). The pairs in the pre- and post-tests were the same except for a few pairs (Due to their partners' absence, a few students took the post-OC test with different partners). Figure 1 below shows the procedure of the OC tests. Student A receives a topic card and starts a conversation by asking, for example, "*What's your hobby?*" Student B answers, and they interact with each other. The test lasts two minutes. The students were filmed during the OC tests.
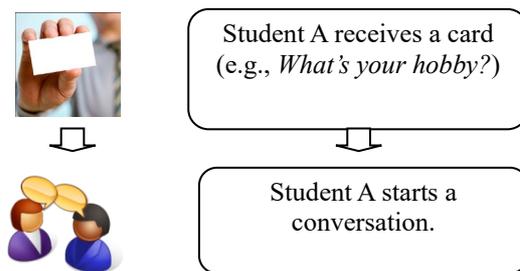

Figure 1. The procedure of the OC tests.

SRL questionnaire

Change in metacognition, self-efficacy, strategy use about oral communication was measured using the SRLQ (the Self-Regulated Learning in Oral Communication Questionnaire, Kobayashi, 2016a, see Appendix). This scale has been validated using structural equation modeling, proving to be both valid and reliable (Kobayashi, 2016a). The questionnaire consists of 19 items and assesses learners' self-efficacy, metacognition and strategy use in oral communication. It contains six factors: self-efficacy, regulation of cognition, knowledge of cognition, awareness of metacognition, cognitive strategies, and interaction strategies. Each factor except for cognitive strategies consists of three items. The cognitive strategies factor consists of four items. Self-efficacy measures students' self-efficacy in the oral communication class. Regulation of cognition measures metacognitive skills such as planning, monitoring, and evaluation. Knowledge of cognition measures metacognitive knowledge such as knowledge of one's cognition, knowledge of how to use the strategy, and knowledge of why and when to use the strategy. Awareness of metacognition measures the awareness of metacognitive knowledge and metacognitive activities. Cognitive strategies measure the use of cognitive strategies and interaction strategies measure use of interaction strategies. The scale takes the form of a 7-point Likert scale ranging from 1 = *not at all true of me* to 7 = *very true of me*. The higher the scores in the scale indicates the greater the self-regulated learning capacity in the oral communication class. Table 4 shows that the scale coefficients of each factor. The internal consistency reliability was .88 for Self-efficacy, .92 for Regulation of Cognition, .90 for Knowledge of Cognition, .76 for Cognitive Strategies, .90 for Interaction Strategies, and .90 for Awareness. The internal consistency reliability as a whole was .92. The result showed that the value of all the factors were more than the suggested threshold value of .50 and were well within the satisfactory range (Takeuchi & Mizumoto, 2014). Taken together, these results indicate that the SRLQ has a good overall reliability.

TABLE 4
Internal Consistency Reliability of the Six Factors (N = 58)

Factors	α
Self-efficacy	.88
Knowledge of Cognition	.90
Regulation of Cognition	.92
Awareness	.90
Cognitive Strategies	.76
Interaction Strategies	.90

The following students' data were excluded from analysis: (a) they had lived overseas for more than six months; (b) they had learned English at English conversation schools for a long time; (c) they had obtained high scores on TOEIC or EIKEN; (d) they were absent for pre- or post-OC tests; and (e) they did not complete the questionnaire.

Data Collection and Procedure

To link the outcome of the participants' learning with their performance, their interactional competence data were obtained. The OC test was administered at the beginning and at the end of the study. The SRLQ was also administered at the beginning and the end of the study, immediately after the OC test.

After the OC tests the questionnaires were distributed. The instructor obtained the students' consent to use the data for the analysis. Also, students from both groups were selected for semi-structured interviews to gain deeper understanding of quantitative results. In order to closely look at how and why metacognition influences affects and strategy use, semi-structured interviews were conducted, adopting a stimulated recall method (Gass & Mackey, 2000).

As can be seen in Table 5, 12 students in total participated in the interviews. The participants consisted of two cohort groups of five (from the contrast group) and seven (from the treatment group) students.

TABLE 5
Interview Data Collection

	Treatment Group (*n* = 7)	Contrast Group (*n* = 5)
2018, August	Student A, Student B, Student C	Student V, Student W, Student X
2019, August	Student D, Student E, Student F, Student G	Student Y, Student Z

The interviewees (pseudo-initials) were carefully chosen based on these criteria: (1) their pre-linguistic knowledge resources (LKR) must be average because LKR affects strategic behavior and grades (Macaro, 2010). LKR contains: (a) Lexical-semantic knowledge, (b) Phonological-graphological knowledge, (c) Morpho-syntactic knowledge, and (d) Pragmatic knowledge; and (2) their pre-interactional competence is also average so that results can be generalized for the target sample. Twelve interviewees who met these criteria were selected. Their LKR was tested based on their vocabulary, grammar, and pragmatics on the Eiken pre-second test. They participated in the interviews individually in a classroom after the intervention (after they took the post-oral communication test). They received explanation of the research outline and purpose and how the obtained data would be used (e.g., their responses would not affect their grades and confidentiality would be respected). All the participants signed a consent form before the data collection process began.

The interviews were conducted in Japanese, using their SRLQ responses, asking their reasons for their choices and experiences. The researcher also asked their initial motivation towards learning English and how it changed over the semester and why. The researcher also had the interviewees look at their pre- and post-OC tests' videos to understand the impact of the instruction on their metacognition and performance. The researcher asked them what they had been thinking before, during, and after their pre- and post-OC tests. The interviewees could pause the videos whenever they wanted to express their thoughts and reflections. For the students from the treatment group, their goal-setting and reflection sheets were also

used for the interviews. Each session lasted approximately 20-35 minutes. All the interviews were recorded, transcribed verbatim, and highlighted for answering the hypotheses.

Data analysis was carried out as follows: First, the verbatim transcripts were read over and over again. Then, how the metacognitive instruction influenced students' performance (both inside and outside the classroom) was highlighted, comparing both the data (i.e., data from the treatment group and data from the contrast group): Characteristics of the two groups' changes were shown later in detail. Table 6 below illustrates brief descriptions (e.g., their motivation of English language learning, learning behavior) of the interviewees.

TABLE 6
Brief Descriptions of Interviewees

Groups	Students	Sex	Brief Descriptions
Treatment	A	F	Low motivation, studying English only for tests
	B	M	Did not like English, had low confidence in English ability
	C	F	Had low confidence in English ability
	D	F	Liked English, had low confidence in English ability
	E	M	Had low confidence in English ability
	F	F	Always lacked confidence in English ability, did not like English
	G	M	Low motivation, had low confidence in English ability
Contrast	V	F	Neither liked nor disliked English, had low confidence in English speaking and reading ability
	W	M	Had low confidence in English ability
	X	F	Had confidence in English ability, but in reality, she was not able to speak English
	Y	F	Neither liked nor disliked English
	Z	F	Did not like English, had low motivation

Brief characteristics of treatment group treatment

- The treatment group received metacognitive instruction. Each lesson was 90 minutes long and the students attended once a week. The author was in charge of the classes. The metacognitive instruction started in week three of the 15-week class. At the beginning of the course (the first week), the teacher explained the course, its aim and how the students would be evaluated. Then, the teacher had the students get to know each other well. Next, the teacher explained the pre-OC and reading tests (procedure, time, tasks, etc.).
- They received knowledge of interaction strategies for their oral communication development. Accordingly, they had a shorter time for being involved in interaction (e.g., pair-work or group-work) in the classroom.
- They were encouraged to set goals for their own oral communication improvement both inside and outside the classroom and to reflect on.
- They used their course book as well as a 14-page booklet for metacognitive instruction. The booklet was developed by Kobayashi (2012) for metacognitive instruction in the oral communication class. Table 7 below gives an overview of the booklet.

TABLE 7
Contents of the Booklet for Metacognitive Instruction

Pages	Contents
1–2	Outline of metacognitive instruction and its objectives, evaluation, and outcomes
3–4	The objectives of eight sessions and interaction strategies
5–6	Eight sessions to raise awareness as language learners and to develop self-regulatory strategies regarding OC
7–14	Goal-setting and reflection sheets

Overview of metacognitive instruction

● There were eight special sessions of metacognitive instruction (see Table 8), one per week. Each session lasted approximately 20 minutes and was conducted in Japanese. In sessions 2, 4, 6, and 8, interaction strategies were introduced as strategy knowledge in Japanese.

● Students engaged in goal-setting and reflection regularly for 8 weeks, using goal-setting and reflection sheets. They were encouraged to set personal goals in terms of how to improve their oral communication skills and to reflect on how they did well to achieve their goals regularly by sharing their reflections in the classroom with their peers and the teacher, giving each other advice.

TABLE 8
Eight Sessions of Metacognitive Instruction

Session	Topic(s)	Instructions Given
1	Goal-setting	Encouraged learners to write their short-term goals (e.g., they could write what to do in order to be able to communicate well in English as a result of the course)
2	Goal-setting and reflection	Asked them to share their goals in the class, and explained why goal-setting is important by drawing a learning cycle of plan, do, and review (and plan) Explained that without goal-setting, they cannot evaluate themselves efficiently and effectively, and discussed objectives for metacognitive instruction, its outline, evaluation (after they set goals, they evaluate their own performance critically, etc.), and outcomes
	Interaction strategies (ISs)	Taught interaction strategies explicitly with metacognitive activities and encouraged students to set specific goals regarding interaction strategies before the task, to monitor their own performances during the task, and to evaluate their own performances after the task
		Taught IS① Showing interest; IS② Asking back naturally
3	The importance of review	Explained the importance of review using Ebbinghaus's forgetting curve, interacting with the students
4	How OC works ISs	Explained how OC works, eliciting ideas from students
		Taught IS③ Using 5W1H questions (What did you do?, How was it? etc.)
5	Tips for goal-setting	Encouraged students to share their goals, gave tips about goal-setting, and had them discuss what kind of learning strategies there are
6	ISs	Taught IS④ Clarification checks
7	Transferring	Explained transferal of learning strategies learnt into new tasks
8	ISs	Taught IS⑤ Comprehension checks; IS⑥ Confirmation checks

Brief characteristics of contrast group treatment

● The contrast group used the same textbook and materials.

● They did not engage in metacognitive activities such as planning, monitoring, and reflecting on their performance during activities.

● Because they did not have the opportunity to listen to the teacher on how OC works and other metacognitive knowledge about OC, they engaged in more interaction activities than the students in the treatment group. That is, they had a longer time for interacting with each other in the classroom by repeating tasks with different partners.

● Especially at the beginning of the course, some students in the contrast group could not interact with each other in English at all. Therefore, the teacher needed to give a lot of scaffolding to help them interact with each other in English. The teacher wrote what they could say or ask each other in English. However, for the purpose of the study she tried not to explain the intention of why they should ask questions or why it is important to communicate with each other.

Results

First, it was hypothesized that the group receiving the experimental treatment would outperform the contrast group on the posttest of interactional competence. Second, it was hypothesized that the participants in the treatment group would demonstrate greater growth in metacognition, self-efficacy, strategy use, and interactional competence than the participants in the contrast group. In addition, it was hypothesized that less skilled learners in terms of OC in the treatment group would show a greater improvement in achievement than their more skilled counterparts.

Effect of Metacognitive Instruction on Interactional Competence

As can be seen in Table 9, *t*-tests showed that both groups improved their interaction competence significantly. According to Cohen's (1988) guidelines, *r* = .10 is a small effect size, *r* = .30 is a medium effect size, and *r* = .50 is a large effect. Compared to the contrast group, the treatment group improved their Knowledge of Cognition and Regulation of Cognition, Cognitive Strategies, and Interaction Strategies significantly. Although the participants' Self-efficacy in the treatment group was not enhanced significantly, that of the contrast group was increased.

TABLE 9
Results of t-tests, Means, Standard Deviations for Interactional competence and SRLQ

Factor	Groups		*M*	*SD*	*t*	*p*	*r*
Interaction Competence	Treatment	Pre-test	4.64	1.45	-6.05	.00	.76
		Post-test	7.32	2.20			
	Contrast	Pre-test	3.82	1.60	-4.74	.00	.66
		Post-test	5.10	2.34			
Knowledge of Cognition	Treatment	Pre-test	2.06	.94	-2.60	.02	.45
		Post-test	2.67	1.22			
	Contrast	Pre-test	2.54	1.18	-1.61	.12	.29
		Post-test	2.86	1.22			
Awareness of Metacognition	Treatment	Pre-test	4.42	1.87	-1.49	.15	.28
		Post-test	4.87	1.24			
	Contrast	Pre-test	4.33	1.49	-1.02	.37	.19
		Post-test	4.51	1.57			
Regulation of Cognition	Treatment	Pre-test	2.14	1.09	-4.47	.00	.65
		Post-test	3.23	1.14			
	Contrast	Pre-test	2.47	1.12	-1.37	.18	.25
		Post-test	2.78	1.41			
Self-efficacy	Treatment	Pre-test	2.21	1.22	-1.51	.14	.28
		Post-test	2.49	1.03			
	Contrast	Pre-test	2.31	1.09	-2.32	.03	.40
		Post-test	2.74	1.32			
Cognitive Strategies	Treatment	Pre-test	2.73	1.12	-3.05	.01	.51
		Post-test	3.36	1.11			
	Contrast	Pre-test	3.23	1.09	-0.09	.93	.02
		Post-test	3.24	1.47			
Interaction Strategies	Treatment	Pre-test	1.85	.96	-4.06	.00	.62
		Post-test	2.88	1.08			
	Contrast	Pre-test	2.52	1.50	-1.05	.30	.19
		Post-test	2.80	1.52			

The changes to (i.e., interaction effects of) interaction competence between the treatment and contrast groups over time, from pre-test to post-test, were analyzed, using repeated measures ANOVA. Table 10 in the following reports the levels of significance for F-ratios for the interaction effects of time by group, metacognition, self-efficacy, and strategy use of pre-test and post-test results for the two groups. It was found that there were significantly greater changes in Interactional Competence (*F* = 5.14, *p* = .03,

$r = .29$), Regulation of Cognition ($F = 5.42$, $p = .02$, $r = .30$), Cognitive Strategies ($F = 4.72$, $p = .03$, $r = .28$) and Interaction Strategies ($F = 4.24$, $p = .04$, $r = .27$). However, there were no significant differences in Knowledge of Cognition, Awareness of Metacognition, and Self-efficacy.

TABLE 10
Interaction Effects of Time x Group in Interactional Competence and SRLQ of Pre-test and Post-test Results for Treatment and Contrast Groups

Factors	Time	Treatment (n = 28)		Contrast (n = 30)		Time × Group		
		M	SD	M	SD	F	p	r
Interaction Competence	Pre-test	4.64	1.45	4.13	1.23	5.14	.03	.29
	Post-test	7.32	2.20	5.60	1.79			
Knowledge of Cognition	Pre-test	2.06	.94	2.54	1.18	.96	.33	.13
	Post-test	2.67	1.22	2.86	1.22			
Awareness of Metacognition	Pre-test	4.42	1.87	4.33	1.49	.64	.43	.11
	Post-test	4.87	1.24	4.51	1.57			
Regulation of Cognition	Pre-test	2.14	1.09	2.47	1.12	5.42	.02	.30
	Post-test	3.23	1.14	2.78	1.41			
Self-efficacy	Pre-test	2.21	1.22	2.31	1.09	.37	.54	.08
	Post-test	2.49	1.03	2.74	1.32			
Cognitive Strategies	Pre-test	2.73	1.12	3.23	1.09	4.72	.03	.28
	Post-test	3.36	1.11	3.24	1.47			
Interaction Strategies	Pre-test	1.85	.96	2.52	1.50	4.24	.04	.27
	Post-test	2.88	1.08	2.80	1.52			

In order to examine the last hypothesis, the participants in the treatment group were grouped, using a cluster analysis, based on their performance on the pre- and post-oral communication tests. The Ward method with the squared Euclidean distance technique was used in applying the cluster analysis to explore distinct characteristics of groups (Oshio, 2011).

Based on a dendogram, it was decided that the participants could be divided into three groups. This decision was supported by a one-way ANOVA, which revealed statistically significant differences for all the variables ($p < .001$). Figure 2 illustrates the cluster profiles of the three groups (i.e., pre-OC mean and post-OC mean). Table 11 shows results of descriptive statistics of each cluster.
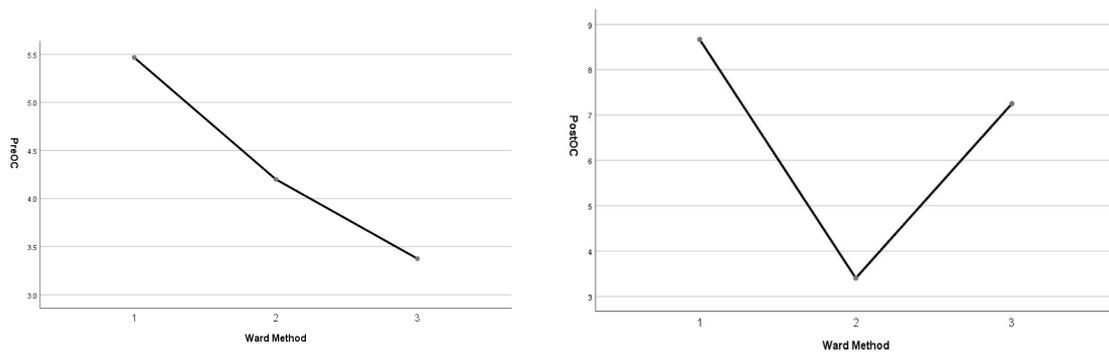

Figure 2. Visual representation of each cluster.

TABLE 11
Descriptions of Each Cluster

	Groups	*n*	*M*	*SD*
Pre-OC	1	15	5.47	1.19
	2	5	4.20	1.64
	3	8	3.38	0.52
Post-OC	1	15	8.67	1.18
	2	5	3.40	0.89
	3	8	7.25	0.71

The researcher compared the mean scores of the pre- and post-oral communication tests among the clusters. The numbers of participants in all the clusters were small; and therefore, it would violate the assumption of parametric tests. Accordingly, a non-parametric test, that is, the Wilcoxon signed-rank test, was also conducted to double-check the results. However, this procedure yielded the same results ($z = -3.845$, $p = .000$, $r = -.73$). According to Cohen's (1988) guidelines, the effect size $r = .50$ can be considered a large effect.

As can be seen in Table 11 above, the learners belonging to Cluster 1 ($n = 15$) can be referred to as the "learners with high proficiency". Compared with the other two groups, their mean of interactional competence was higher. The learners in Cluster 2 ($n = 5$) were "learners with medium proficiency" as their mean of interactional competence lies just between those of Clusters 1 and 3. The learners in Cluster 3 ($n = 8$) were the "learners with low proficiency" as their mean of interactional competence was lower than that of the other two groups. From these results, it was assumed that the three groups were different in terms of their interaction competence at the beginning of the course.

Of the three clusters, the learners in Cluster 3 presented the greatest improvement in interactional competence (3.38→ 7.25). However, the learners in Cluster 1 also showed improvement in interactional competence (5.47→8.67). These results seem to suggest that not only the learners with low proficiency (Cluster 3) but also the learners with high proficiency benefited from the metacognitive instruction.

Data from stimulated recall interviews provided further insights into the development of their metacognition and indicated how they became more autonomous learners compared to the participants from the contrast group. All the following excerpts were translated into English from Japanese by the author. The initial, I, represents the interviewer (i.e., author). The words in double brackets in excerpts were added by the researcher for readability.

Interview Findings

Data from the stimulated recall protocols provided deeper insights. Due to limitations of space, only a few examples are given here. First, the interviewees from the treatment group demonstrated their greater metacognition (e.g., they were highly aware of how they used their strategies and why, including metacognitive strategies and interaction strategies for their better performance inside the class and valued them). Many students in the treatment group commented on the importance of interaction strategies. For example, one student commented:

> E: *You told us that you should ask back ((to communicate with each other better)), and there are some expressions when you want to ask back, right? ((i.e., How about you?)) So, I was very aware of it, although I was not aware of it until I was told so. (Student E)*

This above comment shows his awareness of interaction strategies. Many students in the treatment group also commented about the importance of goal-setting and reflection. For instance, one student commented:

B: If you set your goals, you will become better at ((anything)) definitely. Regarding reflection, if you take a video ((of your performance)), you will notice your weakness, so I think reflection is important. (Student B)

In the class, the researcher told the students in the treatment group about the importance of reflection, giving an example of how an Olympian improved his performance using a video recording his own performance (swimming). His comment shows his awareness of metacognitive knowledge, referring to the example.

Another participant echoed:

A: In the class, I couldn't remember what we learned previously in the class once. I was frustrated, so I thought reflection is important. (Student A)

Her comments show her awareness of the importance of review.

Second, while many students in the contrast group ended up speaking in Japanese during both pre- and post-OC tests, students in the treatment group managed to communicate in English during the post-OC tests. It seems that their actions were affected by their goals. One student in the treatment group commented that one of her goals was not to use Japanese at all. An example is given below.

C: I had something in my mind in Japanese at that time as well, but I didn't know how to say in English, so I stated one word by one word. (...)
I: But you never spoke in Japanese.
C: I was determined not to use it. (Student C)

Another example also shows her action was affected by setting her own goal. She reported how she communicated in English in the classroom and during the test, using interaction strategies and why.

I: Did you have such a goal that you say "That's nice" ((in your journal))?
F: I don't think so, but I've felt that I could achieve my goal, that is, to keep conversations going by saying so.
I: I see.
F: (...) I was trying to communicate in English by asking back the same question I was asked, asking follow-up questions, or showing interest by saying for example, "That's nice".
I: Did you? I wonder why. Well, you wrote English Journals. Was it meaningful?
F: Hmm, (...) because I wrote ((these goals)) I think I was aware of my goals and I thought I had to do it properly. (Student F)

Her comments show her metacognitive knowledge and knowledge of interaction strategies. Like this, it seems that their actions were affected by their goals. These above comments on the use of interaction strategies support the result, that after the intervention the treatment group outperformed the contrast group significantly in interactional competence and add some insight. Although both groups improved their interaction competence, some students in the treatment group used interaction strategies well in order to avoid communication breakdown. While, the students in the contrast group tended to end up speaking in Japanese or be silent in such a situation. However, it should be noted that some students in the treatment group commented the difficulty of the use of interaction strategies when expressions were rather difficult and unfamiliar.

C: Although short expressions such as "Sounds good" are okay, but long expressions, such as "I something ((You know what I mean)), or "You ((mean))?" are difficult for me.
I: I see. "You mean...?" was difficult?

> *C: Yes, I didn't know when to use, either. (Student C)*

Third, many interviewees in the contrast group commented that they did not do anything for improving oral communication outside the classroom. On the contrary, many students in the treatment group commented on their learning English outside the classroom after the intervention. For example, one interviewee said:

> *A: I was studying only for tests, but recently I think I've been motivated ((to study English)).*
> *I: Oh yeah, any reasons? (…)*
> *A: In the class, I came across some unknown English words and I became interested in. (…) I watch many movies.*
> *I: Oh yeah? That's great. With English subtitles?*
> *A: ((nods))*
> *I: That's wonderful.*
> *(Student A)*

Besides, it seems that their proactive learning behaviors outside the classroom were influenced again by their setting their own goals.

> *I: You wrote ((in your English Journal)) that you try not to read ((a dialog)) in a monotone. (…) You do this at home?*
> *D: ((nods))*
> *I: Ah, you did it. Do you remember how long you did this? (…)*
> *D: Only ten minutes.*
> *I: Ten minutes? For one ((dialog))?*
> *D: Yes.*
> *I: Oh really? (…) You downloaded it. That's amazing. Was it easy ((to download))?*
> *D: Actually, it was quite difficult, so I couldn't do it soon.*
> *I: But you did it. That's great. Is that because you wrote this goal ((i.e., try not to read in a monotone))?*
> *D: Ah, that's very much so. (Student D)*

Discussion

This study investigated the effects of metacognitive instruction by having a contrast group. As we have seen in Table 1 and Table 2, the result of *t*-tests on pre-English proficiency and pre-interactional competence have confirmed that there was no significant difference between the two groups. Regarding the first hypothesis, that after the intervention there would be significant difference in interactional competence, the answer is "yes". This result seems to corroborate the previous research findings (e.g., Kobayashi, 2014, 2016b; Nakatani, 2005; Rahimi & Katal, 2013). Nakatani's (2005) study also found significant differences in oral communication tests' results. In Rahimi and Katal's (2013) study, those learners who received metacognitive intervention also improved their metacognitive awareness and speaking ability. Kobayashi's (2014, 2016b) research findings suggested that metacognitive instruction in oral communication leads to greater metacognition, strategy use, and outcome. The interview findings seem to explain partly why the learners from the treatment group improved their interaction competence. The interview data also have indicated that after the intervention the students became more metacognitively aware and more familiar with cognitive strategies and interaction strategies and utilized them both inside and outside the classroom.

With regard to the second hypothesis, that participants in the treatment group would demonstrate greater growth in metacognition (Knowledge of Cognition, Awareness of Metacognition, and Regulation of Cognition), self-efficacy, and strategy use (Cognitive Strategies, Interaction Strategies) than participants in the contrast group, the results are mixed. Although the participants in the treatment group showed greater development in Regulation of Cognition, Cognitive Strategies, and Interaction Strategies, there were no significant differences in other factors: Awareness of Metacognition, Knowledge of Cognition, and Self-efficacy. However, the result that, the students from the treatment group displayed greater development in Regulation of Cognition than the students from the contrast group significantly, indicates that the students in the treatment group became more capable of setting goals, monitoring, and evaluating. Moreover, the result that, the students from the treatment group improved their Knowledge of Cognition and Regulation of Cognition validates that the students in the treatment group became more aware of strategies and self-regulatory, which is in agreement with previous research findings (e.g., Kobayashi, 2014; Nakatani, 2005). As of self-efficacy, although the students in the contrast group showed greater self-efficacy, both groups enhanced their self-efficacy. Since the students in the contrast group had more interaction in the class compared to the students in the treatment group, this result seems to be rather reasonable. Both groups had low confidence in their English ability originally and more interaction in the class seemed to allow the students in the contrast group had more opportunities to interact in English, which probably led to their greater self-efficacy.

Regarding how the participants in the treatment group would become more autonomous, compared to the participants in the contrast group, data from the stimulated recall protocols further supported the result. We have observed that learners in the treatment group became more metacognitively aware after the intervention and noticed the importance of interaction strategies. They tried to use interaction strategies to communicate with each other better during the classroom and the post-OC test and improved their interaction ability. Compared to the students in the contrast group, the learners in the treatment group also became more proactive learners by watching movies in English, downloading the audio materials, listening to them, and reading the texts aloud outside the classroom, for example. Discussions through special sessions seemed to play a significant role for developing their awareness and learning (e.g., Fahim & Fakhri Alamdari, 2014; Vandergrift & Goh, 2012).

With respect to the third hypothesis, that the learners with low proficiency in the treatment group would show a greater improvement in achievement than the students with high proficiency, the answer is "yes". The results of the cluster analysis in Table 11 illustrated that the learners in Cluster 3 (learners with low proficiency) showed the greatest improvement among the three clusters. However, as can be seen in Table 11, the learners in Cluster 1 (learners with high proficiency) also presented great improvement in interactional competence. These results seem to suggest that both learners with high and low proficiency will benefit from this kind of metacognitive instruction, which is encouraging as the previous research findings suggested that weaker listeners may benefit most from metacognitive instruction (e.g., Cross, 2011; Kobayashi, 2018). The participants in this study are EFL learners with rather low English proficiency; however, the result, that the learners with high proficiency in this study also showed substantial improvement, seems to indicate that not only weaker communicators but also rather stronger communicators might also benefit from this kind of metacognitive instruction.

Conclusion

Before we conclude, limitations need to be considered. First, a limitation of this study is that the results of this study do not necessarily apply to other English level groups. The participants of this study were university EFL learners with rather low English proficiency. It would be important to examine the effectiveness of metacognitive instruction on more advanced learners of English for further study. Second, this study was conducted in real classroom settings, as shown earlier, at the beginning of the course, there were many students who could not interact with each other in English at all. In such a case, the teacher

had to give a lot of scaffolding to the contrast group to facilitate interaction. If it had not occurred, the results of this study might have been different. For example, their self-efficacy might not have been increased significantly.

This study has examined the effectiveness of the metacognitive instruction in oral communication with Japanese EFL learners. From the results, first, it may well be concluded that the present study has demonstrated the effectiveness of metacognitive instruction. Comparisons between the treatment and contrast groups have revealed that the learners from the treatment group made greater gains than those from the contrast group in interaction competence, Regulation of Cognition, Cognitive Strategies, and Interaction Strategies. This finding contributes to confirm the importance of metacognitive instruction in OC in the EFL context. Second, the finding, that the learners with low proficiency from the treatment group marked greatest gains in interaction competence, has suggested that metacognitive instruction is the most effective for the weak learners in terms of OC. However, it should also be noted that the result, that the learners with high proficiency from the treatment group also presented great gains in interaction competence, has shed new light on the potential benefit of metacognitive instruction on various learners. Third, the follow-up qualitative analyses have displayed that metacognitive instruction could increase learners' metacognition and motivation so that learners can become more autonomous learners not only inside the classroom but also outside the classroom.

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Appendix

The Self-Regulated Learning Questionnaire (SRLQ) items (translated from Japanese into English) (Kobayashi, 2016a)

Note. These are presented below each part (i.e., Part1–Part4) in the original questionnaire:
1 = (0–10%)   2 = (10–20%)   3 = (20–40%)   4 = (40–60%)   5 = (60–80%)   6 = (80–90%)   7 = (90–100%)
1 = (*Not at all true of me*)   7 = (*Very true of me*)

Part 1: Self-efficacy items

I feel I can obtain satisfactory grades in the OC class.	1	2	3	4	5	6	7
I feel I can understand basic contents taught in the OC class.	1	2	3	4	5	6	7
I feel I can do well on assignments and tests in the OC class.	1	2	3	4	5	6	7

Part 2: Knowledge of Cognition items

With respect to OC, I can evaluate my own learning progress.	1	2	3	4	5	6	7
With respect to OC, I have a clear goal when I use learning strategies.	1	2	3	4	5	6	7
When I study for OC, I am aware of what strategies I use.	1	2	3	4	5	6	7

Part 3: Awareness of Metacognition and Regulation of Cognition items

With respect to OC learning, I think it important to know my strengths and weaknesses as a learner.	1	2	3	4	5	6	7
With respect to OC learning, I think it important to know what learning strategies are most effective and when to use them effectively.	1	2	3	4	5	6	7
I think it important to reflect on how well I did after doing OC tasks.	1	2	3	4	5	6	7
I try to ask myself regularly whether my learning progress serves goals I set for myself.	1	2	3	4	5	6	7
After I finish the task in the OC class, I try to evaluate my performance.	1	2	3	4	5	6	7
After I learn in the OC class, I try to evaluate to what degree I achieve my own goal I set.	1	2	3	4	5	6	7

Part 4: Strategic Behavior items

When I study for OC, I memorize basic expressions and sentence patterns.	1	2	3	4	5	6	7
When I study for OC, I read sentences and words aloud over and over again.	1	2	3	4	5	6	7
When I study for OC, I review the notes of the class.	1	2	3	4	5	6	7
When I study for OC, I write down important expressions and sentence patterns.	1	2	3	4	5	6	7
In the OC class, I confirm in English with my classmate whether I understand what he/she is saying.	1	2	3	4	5	6	7
In the OC class, I confirm in English with my classmate whether he/she understands what I am saying.	1	2	3	4	5	6	7
In the OC class, I communicate in English to keep the conversation going well.	1	2	3	4	5	6	7