Cognitive Apprenticeship during Pair Work Activity to Improve Oral Presentations

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Abstract

The purpose of this study is to investigate how the students engaged in cognitive apprenticeship during the pair work activity to improve their academic oral presentations in an English as a foreign language (EFL) classroom. The participants are Japanese university students with little experience of making oral presentations in public. Advice, feedback, and comments on the advice–response sheets written by the students during three–time pair practices were used for qualitative analysis. The results showed students engaged in cognitive apprenticeship by playing two roles, as an advisor and advisee. While students engaged in peer interaction in the form of pair practice, they engaged in cognitive apprenticeship through exploration, articulation and scaffolding as a listener, and exploration and articulation as a presenter. Through pair work activity, the students came to realize that making a presentation audience–friendly is necessary at all times. The structure of the activity directly facilitated the development of this perspective.

Keywords: cognitive apprenticeship, academic oral presentation, pair work activity, zone of proximal development, sociocultural theory

1. Introduction

Japanese learners of English today need English oral presentation skills in order to express their own ideas or opinions in public. However, they have had few opportunities to do so in upper higher education. Opportunities must be created for university students to experience an oral presentation on current issues and social topics to enhance their comprehensive communication skills. The question is how to design and implement an activity which would guide students who had no experiences of making an academic oral presentation before entering university. Therefore, it is meaningful to show how to design and implement an activity guiding students to perform an academic oral presentation with appropriate scaffolding in the EFL classroom.

Sociocultural theory (SCT) will give educators and practitioners significant implications in

designing and implementing such an activity. SCT considers language learning to be a social practice and regards learners as active participants in the construction of learning processes. An essential construct of SCT is the zone of proximal development (ZPD). The ZPD explains how learning takes place, emphasizing potential development. The question is whether it is possible to learn the language within the ZPD of each other in the classroom, which usually consists of more than 30 students. It is necessary to explore how the ZPD can be best utilized in the EFL classroom. Furthermore, social theory such as cognitive apprenticeship plays a significant role in understanding the social nature of learning (Collins et al., 1989; Collins, 2006; Dennen & Burner, 2008). In recent years, in schools, a new form of apprenticeship called "Cognitive Apprenticeship Methods (Collins, 2006; Dennen & Burner, 2008)" has emerged to teach the cognitive skills used in performing classroom tasks. Cognitive apprenticeship is defined as learning through guided experience on cognitive and metacognitive skills and processes (Collins et al. 1989).

The concepts of cognitive apprenticeship give us significant implications in operationalizing the ZPD idea in the EFL classroom. This suggests that these concepts can make it possible to create the learning community in which a group of learners can together create a powerful ZPD. Therefore, the attempt to apply the concept of cognitive apprenticeship to the EFL classroom is necessary and meaningful. Moreover, there have been no studies focusing on how engagement in cognitive apprenticeship during pair work activity can assist students in making an academic oral presentation in the EFL classroom. This study focuses on how engagement in cognitive apprenticeship during pair work activity can assist students in making an academic oral presentation in the EFL classroom. The present study employed a qualitative method with the following research question:

> How do students engage in cognitive apprenticeship during the pair work activity in order to make their academic oral presentations better?

2. Literature Review

Sociocultural theory (SCT) assumes that human cognition is formed through engagement in social activities. In order to understand human learning or higher cognitive development, it is important to look at the social activities that the individual engages in and see how they reappear as mental activities in the individual (Leont'ev, 1981; Vygotsky, 1978, Wertsch, 1985, 1991; for L2, see Lantolf, 2000; Lantolf & Appel, 1994). Vygotsky's concept of the ZPD embodies his view that an individual learner needs to receive assistance appropriate to his or her potential level. This perspective can be applied to second language learning (SLL) since the concept of the ZPD explains the process

of language learning. In SLL, some studies have shown that in addition to more proficient learners assisting their peers, mutual assistance among learners of similar proficiency also occurs. However, it should be noted that collaboration alone does not guarantee that learning will occur (Ohta, 2001). It means that not only collaboration but also the construct of the ZPD is necessary for learning to occur.

The past studies concerning the ZPD have mainly dealt with the interactions between an expert and novices or between peers, for example, mainly peer–peer dialogue. Very little research has been conducted in the setting of the classroom except Ohta (2001), whose setting is Japanese as a foreign language. The question is whether it is possible to learn the language within the ZPD of each other in the classroom as a whole. In other words, the question is how the concept of the ZPD can be best utilized in the EFL classroom, which usually consists of more than 30 students in Japan. It is essential to explore how a group of learners can together "create a powerful ZPD" (Wells & Claxton, 2002, p. 9). In order to answer this question, the concept of *cognitive apprenticeship* should be discussed next.

The teaching method based on cognitive apprenticeship gives learners "the opportunity to observe, engage in, and invent or discover expert strategies in context" (Collins, 2006, p. 50). There are six types of instructional strategies: (a) modeling, (b) coaching, (c) scaffolding, (d) articulation, (e) reflection, and (f) exploration. Modeling refers to demonstrating the thinking process, coaching means facilitating while learners perform a task, and scaffolding refers to supporting learners' cognitive activities as needed. Articulation means encouraging learners to verbalize their knowledge and thinking, and reflection means encouraging learners to compare their performance with others'. Exploration means encouraging learners to pose and solve their own problems. The aim of this method is to encourage learner autonomy, which would help learners to define and formulate the problem which should be solved. Since the concept of cognitive apprenticeship can help operationalize the ZPD idea in the EFL classroom, an attempt to apply them to an EFL classroom is meaningful.

3. Method

3.1 Participants

The selection process for individuals was nonrandom sampling. This means a convenience sample in which respondents were chosen based on their availability. Participants were selected to represent university students. The participants of the current study were freshmen who were learning EFL in one university in Kanto area. A total 95 students (freshmen: 31 male and 64 female) from three different classes participated in the study. They were grouped into three classes: Class A, Class B and Class C, 33 students, 29 students, and 33 students respectively. They major in comparative cultural studies. These students were taught by the same instructor. The present researcher taught these

three classes as an instructor and designed all the teaching plans for these English lessons for both the first semester and the second semester. The current study focused on the second semester which lasted for 15 weeks. The aim of the course was to improve not only reading skills but also listening, speaking and writing skills with special focus on the global news. Since they were English as a foreign language (EFL) learners, they had limited English input and output outside the classroom. Students were at an intermediate level in terms of reading skills, but had little confidence in speaking. Furthermore, most of the students have rarely had experiences of making an oral presentation in English prior to university education.

3.2 Pair Work Activity as Part of Oral Presentation Activities

The Oral Presentation Activities (OPAs) include the following steps: (a) choose news articles from English newspapers, (b) read the news articles intensively, (c) write a draft of a presentation, (d) have drafts checked by the instructor and returned for revision, (e) practice in pairs three times, both giving and receiving advice and feedback, (f) make their oral presentations in front of the class, and (g) evaluate classmates' presentations using the listening sheets. The OPAs are a combination of two activities: a pair work activity for practicing presentations and exchanging advice and feedback, and an oral presentation given in front of the class. First, the aim of pair work activity was to give students opportunities to practice their presentation with three different partners, including giving advice and providing feedback. The topic of the presentation is 'the news I'm most interested in', which includes a summary of the news, the reason they are interested in the story, and opinions about the story. The main goal of the presentation is to have speakers send a message clearly to their peers. This study focuses on the first part of the OPAs: pair work activity.

Students practiced their presentations in pairs with three different partners for 80 minutes. In the first practice, students were allowed to look at their drafts. In the second practice, they were encouraged not to look at the drafts. Finally, in the third practice, they were required to deliver the presentations without looking at their drafts. At that time, their drafts were given to their partners, who were encouraged to assist when necessary. The aim of this activity was to provide students with the opportunity to (a) practice their own presentations, (b) help each other make their presentations better, (c) observe their partners' presentations from the audience's perspective, and (d) explore what should be done to improve their partners' presentations as well as their own. This activity also increased in complexity as it progressed. During pair practices, each student played the role of both listener and presenter.

During pair work activity, the students played two different roles, as an advisee (presenter) and

as an advisor (observer). The students were required to (a) deliver their presentations with three different partners, and (b) observe three different partners' presentations and give some advice and feedback. In the current study, "Student A" refers to students who played the role of a listener (advisor) by giving advice to three different partners, while "Student B" refers to students who played the role of presenter (advisee), receiving advice from partners.

3.3 Procedure

3.3.1 Advice–Response Sheet (ARS)

During pair work activity, the Advice–Response Sheets (ARSs) (See Appendix) were used. These were designed around the principles for developing cognitive apprenticeship environments (2006, Collins). As a presenter, student B delivered his or her presentation to three different partners. As an advisor, student A listened to his or her partners' presentations and gave some advice on what should be improved. They were required to write advice concerning 'content' and 'speaking skills' on the ARS. Moreover, student A played the role of not only advisor but also evaluator throughout pair work activity.

Peer evaluation increases in complexity over the three–practices. In the first practice, student A was required to evaluate the partner's presentation, focusing mainly on two aspects, 'content' and 'speaking skills'. In the second and third practices, they had to evaluate their partners' presentations while focusing on more detailed aspects. Four aspects of 'content' should be evaluated: (a) clear statement of the topic, (b) clear explanation of the news, (c) clear statement of the reasons, and (d) clear statement of the opinion. Concerning the speaking skills, delivery, eye contact, volume, and visual aids should be evaluated by the second and third partners. After that, student B, the presenter, wrote some responses to each piece of feedback or advice, while thinking about how to solve the problems pointed out by his or her partners. These were written on the ARSs. Based on some advice they received, each student had the opportunity to revise their drafts and practice outside class.

3.3.2 Data Collection

To answer the research question, comments and advice on ARSs written by the students during three–time pair practices were used to qualitatively investigate how students engaged in cognitive apprenticeship during pair work activity.

3.3.3 Data Analysis

In order to investigate how the students' engagement in cognitive apprenticeship assists them to make an academic oral presentation in the EFL classroom, the current design emphasizes insight, discovery, description and interpretation within a bounded context. The qualitative analysis included

coding of the following data: advice, comments, feedback, and responses written by the students on the ARSs during pair work activity. The current study used a code/thematic matrix for data analysis. A code/ thematic matrix can be extremely useful to build up a certain conceptual model without losing the context on the basis of the them in order to answer the research question in qualitative research. In the process of coding, researchers can develop a matrix of a table of sources that has the potential to help organize the material and analyze them for multiple perspectives on their theme toward theory building (Cresswell, 2005; Kuchartz, 2014).

The researcher took two steps in analyzing the descriptive data obtained from ARS: (a) features of advice and (b)features of response. First, the researcher analyzed what kind of advice the students who observed their partners' oral presentations gave to their partners as an advisor and evaluator, focusing on content and speaking skills. Next, how the presenters responded to the given advice was analyzed, focusing on content and speaking skills. The researcher worked through written advice, comments, feedback, and responses one by one to form aggregated data units, first in codes, and then by collapsing the codes into themes (Brown, 2014; Cresswell, 2015). The final analysis focused on how the students engaged in cognitive apprenticeship during pair work activity, focusing on four aspects of cognitive apprenticeship, that is, modeling, scaffolding, articulation, and exploration.

In order to verify the data coded in the code matrix, the inter-coder agreement between the researcher and an expert was calculated. It is necessary to have at least 20 % of all the codes in the text for inter-coder agreement (Galloway, 2013). Regarding features of advice, the researcher began by choosing 22 descriptions out of 65 by picking up every third description. Among the selected description, 8 descriptions were removed because they shared similar meanings, leaving 15 descriptions in the final cut. That corresponds to 23 % of all the descriptions of features of advice. Then the expert coded 15 descriptions based on the code list made by the researcher. This inter-coder agreement was 89.5 %.

Next, regarding features of response, the researcher began by choosing 22 descriptions out of 65 by picking up every third description. Among the selected description, 7 descriptions were removed because they shared similar meanings, leaving 15 descriptions in the final cut. That corresponds to 23 % of all the descriptions of features of response. Then the expert coded 15 descriptions based on the code list made by the researcher. This inter-coder agreement was 89.8 %. Since basis of the evaluative criterion was 85 % to 90% (Saldana, 2014), two kinds of consistency of the qualitative coding were verified.

4. Results

4.1 Features of Advice or Feedback

4.1.1 Content

Table 1 shows features of advice on content by students A as an advisor.

Table 1: *Features of advice provided by students A as advisor: Content*

Student A: Point out the problem	**Student A: Offer solution**
· Ambiguity of content · Lack of detailed information	· Explain more about the news. · Show some examples.
· Vocabulary: difficult to understand	· Use more comprehensible words. · Explain the meaning of the words after using difficult vocabulary. · Rephrase it with easy words. · Explain the difficult words, using "it means~".
· Lack of reasoning and opinion	· Include more reasoning and opinion
· Lack of consistency	· Use conjunctions · Use discourse markers

As Table 1 shows, students A not only pointed out problems but also offered advice on how to solve the problems. More specifically, students A pointed out problems concerning content: (1) lack of detailed information about the news, (2) use of difficult vocabulary, (3) lack of reasoning and opinion, and (d) lack of consistency. First, whether the presentation is understandable or not is very important for students A. Since this was the first opportunity for students to listen to others' presentations, grasping the overall meaning of the content was their main concern. Furthermore, most of the students demonstrated how to solve the problems accordingly: (4) explain more about the news, (5) show some examples, (6) revise overall organization of the draft, and (7) include more reasons and opinions. Next, each feature is explained in reference to comments representing commonly held feelings among the students.

(1) Lack of Detailed Information

The following comment from one student reflects a common reaction regarding a lack of detailed information:

I almost understood what you were talking about, but it was difficult for me to understand the detailed information of the news. It may be that my listening comprehension was not good. However, I think it would be better if you could include some examples, which would help us understand more

*about the n*ews (S30).

The advisor attributed her failure to understand her partner's presentation to her poor listening comprehension skills. Since this was the first time for her to point out a problem with her partner's presentation, she was rather hesitant to do so. She hedged to avoid hurting her partner's feelings or discouraging her from delivering her next presentation. The advisor acted as a member of the audience and gave some suggestions to her partner, which in turn forced the speaker to see her presentation from the audience's perspective. This might have made the speaker became aware that he/she should consider 5W1H when planning a presentation. Advisors also gave feedback or advice on the use of vocabulary, discourse markers and conjunctions.

(2) Vocabulary

Since students wrote their drafts based on the newspaper articles they had chosen, some of the vocabulary used was difficult for the listeners to understand. Listening was a cognitively demanding exercise for the students. Students A realized that use of difficult vocabulary impedes comprehension. Therefore, students A suggested that paraphrasing or replacing vocabulary with easier words would improve audience comprehension. A common reaction from monitors was, 'I couldn't understand some vocabulary you used in your presentation, so it would be better if you use the words which are comprehensible to the audience' (S53). Most of them illustrated how to solve the problem, stating 'It would be better if you could explain the difficult words for us to understand, using the phrase such as "it means " ' (S17). The listeners offered strategies such as 'Rephrase it with the easier words for us to understand' (S23), or 'Explain the meaning of the words after using difficult vocabulary.' Students A realized that if listeners lacked strong listening skills or relevant background knowledge they were not able to understand the news. Furthermore, they noticed that even though the written draft may be understood by readers, it does not necessarily mean that the spoken form can be understood by listeners. Listeners realized that text message (written information) should be revised for the purpose of the oral message (spoken information) in order to improve audience comprehension.

4.1.2 Speaking Skills

Table 2: *Advice and feedback given by student A: Speaking skills*

Student A: Point out the problem	**Student A: Offer solutions**
· Lack of eye contact	· Try to look up
· Fast speed · Lack of clear articulation	· Speak more slowly and clearly

· Low voice	· Speak more loudly
· Lack of intonation · Monotonous voice	· Emphasize important points · Emphasize important parts or key words by putting stress
· Need to get more attention	· Use gestures
· Need to use visual aids for complicated news (matters)	· Use visual aids to make complicated matters more understandable (i.e. statistics, maps)

At this stage, students A noticed that both *what* is said *how* it is said are very important for the listener. Monitors were becoming aware that both speaking skills and content are critical factors in making oral presentations successful. Specifically, students A became aware of the importance of delivery, eye contact, volume and use of visual aids. At this stage, speakers began to consider the needs of the audience in planning and delivering their presentations.

During pair work activity, the advisors engaged in cognitive modeling, articulation, exploration and scaffolding, which are four elements of cognitive apprenticeship. As for modeling, students A demonstrated their thought processes in analyzing their partners' presentations and stating what action should be taken to improve them. Students B observed this reasoning which can be interpreted as cognitive modeling (Dennen, 2004). In addition, qualitative data show that student A could reveal their thought and thought processes, which is an act of articulation. Features of advice from students A demonstrated the ability to highlight problems with the presentations and offer solutions, which is an act of exploration. Scaffolding also occurred. Qualitative data showed how that students A gave some suggestions or hints in order to make their partners' presentations better by acting as a member of the audience. As for reflection, the qualitative data obtained from the ARS were not sufficient to investigate whether the students engaged in reflection. They had not been asked about what they had learned by comparing their own performance with their partners'.

4.2 Student B's Responses to Partners' Advice and Feedback.

This section reports on how students B responded to their partners' advice concerning content and speaking skills.

4.2.1 Content

Table 3: *Student B's responses to partners' advice and feedback*

Problems pointed out by students A	Student B's responses to the advice
・**Use of difficult vocabulary** You used difficult English words, preventing me from understanding the news	・**Use of comprehensible vocabulary** I will use more comprehensible vocabulary I will explain difficult words, using 'which means'~.
・**Difficulty of the news** The news is difficult for me to understand.	・**Make the news more understandable** Deepen my understanding of the news itself. I will try to explain the news in my own words.
・**Lack of information about the news** Adding more information about the news	・**Deepen the understanding of the news** Read the news article again
・**Lack of your opinion and reasoning** Stating reasoning and your opinion more	・**Develop my opinion** I'd like to develop my opinion further.
・**Difficulty of English expression** It's difficult to understand the written passage by just listening.	・**Change to spoken style** Change from written style to spoken style

As Table3 shows, the presenters began to realize that written style is different from spoken style, which led them to realize the necessity of changing their draft from written style to spoken style in order to improve comprehensibility.

4.2.2 Speaking Skills

Table 4: *Student B's responses to partners'advice and feedback*

Problems pointed out by partners (Students A)	Students B responses to partners'advice
・**Eye contact** Have more eye contact. You look down to read the draft.	・**Necessity of practice** I have to practice more so as not to depend on the draft.
・**Fast speed** You spoke too fast so that I could not understand the content.	・**Necessity of practice** I have to practice paying attention more to speed.
・**Lack of intonation**	・**Necessity of proper intonation** I thought I spoke slowly but I found I didn't use proper intonation.

・**Volume** You spoke in a low voice so that I could not hear you.	・**Appropriate volume** I have to keep it mind that the audience should be able to hear my voice.
・**Ambiguity of content** I could not understand what points were important.	・**Emphasis of key words** I have to emphasize important points such as key words in 5W1H and my own opinion.
・**Lack of pause** If there had been some pause between phrases and sentences, I could have understood the news more.	・**Necessity of appropriate pause** I have to pause between phrases in order to make the sentence more comprehensible to the audience.
・**Encouragement** You can do it better! Keep going to the end!	・**Self-encouragement** I should not be nervous. I'd like to make my presentation better.

Most presenters articulated their thoughts as they carried out their problem solving. In response to the feedback or advice from their partners, most students engaged in exploration and articulation, refining their understanding of how to make a good presentation. Furthermore, based on their partners' advice, they were able to set sub goals, which are one step above the solutions pointed out by their partners. By responding to feedback, the students were guided to a mode of problem solving. In addition, the qualitative data reveal that there are two types of responses to feedback: (a) an exploration of how to solve problems raised in negative feedback or (b) attempts to find methods of improving their presentation further in response to positive feedback. In short, the responses have two outcomes: (a) a refinement of understanding and confirmation of which points should be improved, and (b) the establishment of a sub goal which requires the student to put forth additional effort.

4.3 Findings

First, during pair work activity, both students A and B engaged mainly in articulation and exploration while giving and responding to advice. Moreover, scaffolding was undertaken in the form of suggestions. Furthermore, during pair work activity, advisors revealed their knowledge, reasoning, or problem solving processes (Collins, 2006) when giving advice. Students A played the critic or monitor role (Collins,2006; Dennen & Burner, 2008) in order to articulate their ideas to other students. This is a form of articulation. Students A engaged in articulation and exploration by providing feedback. After listening to feedback, students B also needed to engage in exploration because they were required to write their own comment on how they should solve the problems

pointed out by students A. They also had to verbalize these ideas. In this sense, students B also needed to engage in articulation. Student A's feedback or suggestions based on his or her own exploration may have facilitated student B's exploration. This suggests that both students A and B experienced exploration and articulation during pair work activity. In the third practice, monitors provided deeper observations. Moreover, the students who received feedback engaged in modeling and exploration. Providing feedback can be considered as an act of peer modeling (King, 1999), wherein monitors demonstrated strategies for carrying out task.

Second, students engaged in cognitive apprenticeship by playing two roles as an advisor (student A) and advisee (student B). Students A mainly experienced articulation and exploration by providing feedback. They pointed out problems, constructed solutions and articulated these to the presenters. Students A engaged in scaffolding with students B to make their presentations better. This can be seen in every comment from the student data. As advisors, students A attempted to find problems and offer solutions, which would have raised their metacognitive awareness. This suggests that their exploration deepened through the pair work activity. During pair work activity, the students played two different roles with three different partners. Each student had six opportunities to engage in five different aspects of cognitive apprenticeship. Each aspect of cognitive apprenticeship was different in terms of its intensity. Through pair work activity, the students came to realize that making a presentation audience–friendly is necessary at all times. The structure of this activity directly facilitated the development of these perspectives.

5. Discussion

5.1 Cognitive Apprenticeship during Pair Work Activity

This study has found that student engagement in cognitive apprenticeship is in line with the sociocultural perspective of "humans and human psychological functions as mediated by social practices and cultural artifacts" (Lantolf & Thorne, 2006, p. 25). In this case, 'social practices' relate to pair work activity, and 'cultural artifacts' consist of advice and response sheets (ARSs). In other words, during pair work activity, the students engaged in cognitive apprenticeship mediated by social practices (practices in pairs) and cultural artifacts (ARS).

The main premise of SCT is that learning is considered to be a mediated process. Cognitive functions such as attention, problem solving and voluntary memory are mediated mental activity (Vygotsky, 1978). *Mediation* is the process through which "humans deploy culturally constructed artifacts, concepts, and activities to regulate the material world or their own and each other's social and mental activity" (Lantolf & Thorne, 2006, p. 79). In particular, through one of the most important

symbolic tools, namely language, humans direct and organize their mental activity such as thinking, learning, or solving problems. Cognitive apprenticeship during pair work activity is shown in Table 5.

Table 5: *Cognitive apprenticeship during pair work activity*

Student A	**Student B**
Advisor **Listener**	**Advisee** **Speaker**
Play the critic or monitor role Sub roles: Listen as (a) a partner (b) future member of the audience.	Deliver oral presentation Content / Speaking skills are focused on
1. Exploration (a) Pose the problem (b) How to solve the problem	
↓	
2. Articulation Verbalize thinking and knowledge	⇒ **Exploration** What should be done to solve their own problems?
↓	↓
3. Modeling Show the thought process ↓ Help Student B to build a conceptual model of the processes that are required to make their partners'presentations better.	⇒ **Articulation** Verbalize their own thoughts ↓ Start to build a conceptual model of the processes that are required to make their own oral presentation better.
4. Scaffolding (a) Provide support in the form of suggestions or advice to make the partners'presentation better (b) Exploration, articulation, and modeling promoted the partners'exploration and articulation	

As previously stated, overall, the results have shown that the students had the opportunities to experience two different roles as an advisor and an advisee, in other words, a provider and receiver of advice with three different partners. This made it possible for them to experience four elements of cognitive apprenticeship: exploration, articulation, modeling, and scaffolding.

5.1.1 Exploration

During pair work activity, every student played two different roles as an advisor and an advisee. When students A played the role of advisor, they positioned themselves as one of the members of the future audience, trying to receive their partners' messages. Even though they were not experts, they noticed what lacked in their partners' presentations when they were not able to receive the message clearly. They tried to find out what specific problems prevented them from understanding their partners' presentations, for example, a lack of information about the content, or problems with delivery. After thinking about what was lacking in their presentations, students had to verbalize their thoughts in the form of advice and write them on the activity sheet. This action may have encouraged students A to think deeply and analytically. One of the roles of students A was to note what should be done to make their partners' presentations better. This exploration made it possible for students A to articulate their thought process in the form of feedback and advice. Without exploration, articulation is not possible.

5.1.2 Articulation

The findings suggest that when the students listened to their partners' presentations and provided feedback, they played "the critic or monitor role in cooperative activities in order to articulate their ideas to other students" (Collins, 2006). Students A played the critic or monitor role, articulating their ideas to other students. Students A experienced 'articulation'. In addition, Students B also experienced 'exploration' and 'articulation' during this activity. After listening to feedback, students B also engaged in exploration as they were required to write their own comments on what they should do to solve the problems pointed out by students A.

Students A's feedback or suggestions based on their own 'exploration' may have facilitated students Bs' exploration. Exploration for their partners to solve their own presentation might have raised students B's metacognitive awareness, which can help students Bs' exploration. After listening to feedback, students B also needed to engage in exploration because they were required to write their own comments on what they should do to solve the problems pointed out by students A. They also had to verbalize their ideas. In that sense, students B also needed to engage in articulation. However, the content or characteristics of exploration and articulation are rather different from those which students A employed. Solutions suggested by students B were not necessarily in direct response to the problems pointed out by students A. After receiving advice, students B thought about the problems on their own and how they could be solved within the reach of their own ZPD. After going through this process, students B articulated their own ideas and wrote them on the activity sheet.

5.1.3 Scaffolding

The findings of the present study also reveal that two types of scaffolding occur during pair work activity. One is scaffolding in the form of suggestions or help. Students A gave their partners suggestions, which might have scaffolded them to improve their presentations. The other is a form of scaffolding which facilitated student Bs' exploration.

First, Students A provided support in the form of suggestions to help their partners carry out a task. During pair work activity, students A tried to point out problems in the presentations made by students B. By playing the role of monitor, students A experienced 'exploring' in order to make their partners' presentations better. In this case, the critic and monitor role as a listener made it possible for students A to point out problems with the presentation and offer solutions to their partners. This suggests that students A scaffolded their partners to reach one step further within the reach of the ZPD, making it clear what is necessary to solve the problems.

Second, feedback or suggestions from students A based on their own 'exploration' may have facilitated students Bs' 'exploration'. This can be interpreted as scaffolding in the form of exploration. Scaffolding is the help given to a learner which is tailored to a learner's specific needs in achieving a goal. The best scaffolding provides this help in a way that contributes to learning. Student A's advice might help student B actively participate in constructing a conceptual model of a good presentation. Student A points out the problem and suggests a solution. However, student B responds to the problems by going one step further. Students B tend not to repeat exactly the same solution given by students A. Students B try to find the solutions on their own based on their partners' advice. In that sense, students B actively participate in constructing that knowledge. Effective scaffolding provides hints that help learners solve problems on their own.

Pair work activity helped create an effective learning environment wherein scaffolding was employed in the active construction of knowledge. In effective learning environments, scaffolding is gradually added, modified, and removed according to the needs of the learner, and eventually the scaffolding fades away entirely. Through this pair work activity, students B became aware of the conceptual model of the processes that are required to accomplish the task, which led them to think about how to solve problems on their own. Students A prompted students B to explore what should be done to make their presentations better. Student A's exploration facilitated Student B's exploration, meaning student A's exploration (or advice) played a role in scaffolding.

5.1.4 Importance of Playing Two Different Roles

Playing the monitor role is critical for both students A and B to experience the main elements of cognitive apprenticeship. When students B played a role as a presenter, they paid so much attention

to their own performance that it was difficult for them to monitor their own performance because it is cognitively more demanding than the task required of students A. In other words, it is difficult for students B to play the role of monitor while making their own presentations. On the other hand, students A could concentrate on their monitoring role. This finding is very similar to the recent research studies on L2 learning through peer interaction from the sociocultural point of view (Donato, 1994; Ohta, 2001). According to Ohata (2001), the one who provides the assistance is not necessarily a teacher or more capable peer. She argues that learner abilities are not fixed and emphasizes that peer assistance is often mutual, with peers helping each other, rather than experts helping novices. Ohta (2001) demonstrates how it is possible for a 'weaker' peer to assist a 'stronger' one by examining the alternate roles of peer interaction. As the findings of this study show, playing two different roles in peer interaction is critical. One role is to produce an utterance. The other role is to listen to and monitor the production of another. "While the L2 speaker is tied up with the task of production, the listener who may seem passive, is actively involved, working collaboratively with the speaker" (Ohta, 2001, p. 77).

The findings of this study are in line with SCT, especially regarding the effectiveness of peer interaction (Ohta, 2001). The term *pooling of expertise* is important in explaining the effectiveness of peer interaction. The process of assisted performance is enabled by the nature of working memory and how it is used in conversational interaction (Ohta, 2001). In each role, working memory and selective attention are used differently. As a result, even a 'weaker' learner might be able to assist a 'stronger' one. This can explain the facilitative effect of assisted performance during the pair work activity in this study. The students worked together and collaboratively built the conceptual model of good presentation. This might have been beyond their reach if they had worked on the task alone. It can be said that even peers at almost the same level can learn what is important for a successful oral presentation by playing two roles. Overall, the students experienced different aspects of cognitive apprenticeship. This made it possible for the students to begin building a conceptual model of the processes that are required to accomplish the task (Collins, 2006) during pair work activity.

5.1.5 Mediation by Cultural Artifacts: Advice and Response Sheet (ARS)

ARS played an important role in facilitating students A to engage in exploration. In other words, advisors have the responsibility to point out problems and to explore solutions. This might have prompted students A to express their ideas through verbalization. Verbalization alone would not have made their advice as explicit as that written on the ARS. Since one of the requirements was to write advice on ARS, students A had to make it clear what they had in mind. Therefore, ARS also facilitated student As' clear articulation. This study reveals that ARS is a mediating tool for students to raise

metacognitive awareness. ARS played the role of mediating tool in prompting students to articulate their own thinking. It is a mediating tool for the students, functioning on the learners' ZPD.

5.2 The ZPD and Guided Participation

The findings of this study show the process of students' changing participation in pair work activity. More specifically, the students began to get involved in pair work activitiy, giving advice and feedback, and thinking about how to solve problems on their own even though most of the students felt anxious when making oral presentations. This change in participation can be interpreted as guided participation (Rogoff, 1995). The findings show the mutual involvement of individuals and their social partners, communicating and coordinating their involvement (Rogoff, 1995) while taking part in pair work activity. Successful guided participation should take place within a learner's ZPD. According to Rogoff (1990), cultural learning and development, in addition to individual cognitive development, occur as a result of teaching and learning in the ZPD. The critical point is that guided participation must take place within a learner's ZPD.

Pair work activity employed in this study provided the students with the opportunity to engage in cognitively demanding tasks such as exploration and articulation. In that sense, the students needed to accomplish something beyond their current level of development. This suggests that just working in pairs, alone, does not guarantee that learning will occur. In other words, not only collaboration but also the construct of the ZPD is necessary for learning to occur. More specifically, the construct of the ZPD includes the need to accomplish something beyond the current level of development as a necessary ingredient (Ohta, 2001).

The present study also found that some advice and suggestions given by the advisors reached the ZPD of their peers. The level of advice students A gave may not have been not far beyond their partners' abilities. Compared to the gap found between teachers and students, this difference was not so large. Advice or suggestions offered by students A may have fallen within the ZPD of their peers. As the findings show, assistance should be sensitive to the developmental stage within the ZPD for learning to occur. Learning is not in the acquisition of structure, but in the increased access of learners to participating roles in expert performances (Lave & Wenger, 1991). In other words, the ability to learn can develop if a person is in close relation to the ability to perform tasks.

As discussed so far, the findings of the current study resonate with the views of SCT in that the interactive and collaborative disposition of the classroom creates a social space in which classroom participants are able to provide each other with effective assistance in resolving situational and cultural as well as linguistic problems (Lantolf, 2000; Lantolf & Thorne, 2006; Vygotsky, 1978). Students

interact meaningfully with more and less capable peers in order to develop not only their language skills, but also the social skills that are appropriate in a particular culture, in this case, making an academic oral presentation in the EFL classroom

5.3 Limitations

It is necessary to conduct wide-ranging, long-term research on various types of social activities in the EFL classroom, while targeting various levels of students. Due to limited time and resources, however, the current study focuses on pair work activity at the intermediate level at a Japanese university as a starting point.

5.4 Implications for Teaching and Research

The purpose of the current study has been to make pedagogical suggestions regarding the ways to design and develop an activity which can guide students to performing an academic oral presentation in the EFL classroom. The current study reveals how the leaning takes place through pair work activity in terms of cognitive apprenticeship. It suggests that creation of the cognitive apprenticeship learning environment contributes to guiding students to create a conceptual model of performing an academic oral presentation in the EFL classroom, which would help them to participate in the subsequent similar activity in the future. If L2 educators are to design an activity to help the students to perform academic oral presentations, they have to consider how to enhance their metacognitive awareness through cognitive apprenticeship.

For further research, it is necessary and meaningful to illuminate the dynamic relationships between learners as members of the community where they learn from each other, focusing on how human cognition is formed through engagement in the social activity. In addition, further longitudinal studies of EFL classrooms are also necessary to gain insights into learning process.

6. Conclusion

This study aimed to provide a deeper understanding of student engagement in cognitive apprenticeship during pair work activity in efforts to improve their academic oral presentations. This study reveals that students engaged in cognitive apprenticeship by playing two roles, as an advisor and advisee during pair work activity. While students engaged in peer interaction in the form of pair practice, they engaged in cognitive apprenticeship through exploration, articulation and scaffolding as a listener, and exploration and articulation as a presenter. Through pair work activity, the students came to realize that making a presentation audience-friendly is necessary at all times. The structure

of the activity directly facilitated the development of this perspective.

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Appendix

Advice and Response Sheet (ARS)

1st Practice

5＝excellent　4＝very good　3＝average　2＝fair　1＝poor

	Evaluation 1~5	**[Partner's advice] Name:** What should be improved to make a presentation better?	**[Your own comment]** How to solve your own problems
Content			
Speaking skills			
Your comment			

2nd practice & 3rd practice

Message was: 5＝very clear　4＝clear　3＝so-so　2＝not clear　1＝not clear at all

Content	Message 1~5	**[Partner's advice] Name:** What should be improved to make a presentation better?	**[Your own comment]** How to solve your own problems
1. Clear statement of the topic			
2. Clear explanation of the news			
3. Clear statement of the reasons			
4. Clear statement of the opinion			

5＝excellent　4＝very good　3＝average　2＝fair　1＝poor

SPEAKING SKILLS	Evaluation 1~5	**[Partner's advice] Name:** What should be improved to make a presentation better?	**[Your own comment]** How to solve your own problems
Delivery (Good pace / easy to understand)			
Eye Contact (Presenter keeps head up, does not read)			
Volume (Presenter can be easily heard by all.)			