

Collaborative Interaction as the Process of Task Completion in Task-Based CALL classrooms

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The current study analyses how learners of Japanese interpreted and completed tasks through collaborative interaction in two task-based CALL classes at a secondary school in Australia. Sociocultural approaches of mediation and the zone of proximal development were employed as the analytical tools to identify patterns and roles of collaborative interaction during task interpretation and completion. The paper also critically analyses the suitability of sociocultural approaches as analytical tools for analysing the collaborative interaction which occurred during completion of an open-ended task. The paper concludes with implications for new analytical tools and further research.

Over the past decade, a variety of research in the networked second and foreign language classroom has been conducted, especially in the area of computer-mediated communication. The diverse research fields include tandem learning (Appel & Mullen, 2000; Cziko & Park, 2003; Kötter, 2003; Schwienhorst, 2002), collaborative learning (Roskams, 1997), task-based learning (Gonzalez-Lloret, 2003; Smith, 2003; Leahy, 2004), project-oriented learning (Barson, Frommer & Schwartz, 1993; Kubota, 1999; Debski, 2000; Davey, 2001). Along with the research trend in applied linguistics (AL), more researchers are employing sociocultural theory to explore these research fields in computer-assisted language learning (CALL) (Belz, 2002; Lee, 2004). The core tenets of Vygotskian sociocultural theory, mediation and the zone of proximal development (ZPD) are especially appealing for researchers in language learning and teaching arena. The advocates of sociocultural theory in both AL and CALL consider that collaborative interaction assists co-construction of knowledge and provides assistance for learners to outperform their current knowledge through

socialisation (Antón & DiCamilla, 1998; Belz & Kinginger, 2002; Nassaji & Cumming, 2000; Swain, 2000). Most CALL research conducted employing sociocultural theory is limited to the online interaction (e.g. Belz & Kinginger, 2002; Thorne, 2003) and very few studies are documented on the interaction around computers. Also, there are only a few studies looking at patterns of collaborative interaction, task interpretation, and outcome in the traditional classroom setting (Kobayashi, 2003; Myers, 2000; Storch, 2002a, 2002b, 2004). However, there is no similar study carried out to date in the classroom with computers. Sociocultural theory provides the insight into task completion through collaborative interaction that how pair or group of students come to achieve tasks which are not open-ended (Myers, 2000; Storch, 2002a, 2002b, 2004). The current study attempts to analyse the collaborative interaction which occurred during completion of open-ended tasks in second language CALL classrooms, and critically analyse the suitability of sociocultural theory as the analytical tool.

Sociocultural Theory and Collaborative Language Learning

Sociocultural theory is based primarily on the work of a Soviet cultural-historical psychologist, L. S. Vygotsky (Engeström, 1999; Lantolf, 2000; Vygotsky, 1978). It has a few core tenets which include the concept of mediation, the zone of proximal development (ZPD) and Activity Theory. The first two are of interest to the present study.

Mediation is a concept which describes the relationship between ourselves and the world (Lantolf, 2000). Humans rely on physical and psychological tools to establish this relationship. Physical tools are artefacts which humans have created over time. Psychological tools include mnemonic techniques, arithmetic systems, numbers, sign systems, music, art, and language, which mediate human mental activities (Lantolf, 2000; Lantolf & Appel, 1994; Tocalli-Beller, 2003). Therefore, the concept of mediation elucidates humans' cognitive process and delineates the relationship between individuals and their society (Tocalli-Beller, 2003). In relation to language learning, Donato and McCormick (1994) state that there are two different types of mediation that exist. One is recognised as artefact mediation, which materialised as textbooks or computers. Another form of mediation is recognised as social mediation, which indicates discourse patterns, opportunities for interaction, and assistance provided by teachers and peers. It is the latter type of mediation that is considered as central to the study of collaborative interaction (Gibbons, 2003).

The zone of proximal development is where social forms of mediation are constructed and realised (Lantolf, 2000). As the social affair concerns, collaborative learning thus pertains to this concept of sociocultural theory. Oxford (1997) gives two approaches to collaborative learning by Dewey (1963) and Vygotsky (1978). She claims that in Dewey's view, learners learn by being part of the surrounding community, within the educational setting. Students are to learn in broad, content-rich contexts rather than through smaller problems or projects (Oxford, 1997:447). Similarly to Dewey's approach, Vygotsky (1978) claims that through social interaction with others, an individual develops his or her cognitive system (Oxford, 1997). Vygotsky's ZPD is the concept of the individual's learning potential which can be accessed by receiving assistance from someone who is more capable than the learner, such as the teacher or more capable peers (Lantolf, 2000; Oxford, 1997; van Lier, 1996). The teacher or peers can provide 'scaffolding' (Wood, Bruner & Ross, 1976) for the

learner to build up his or her intellect, that is, by helping the learner to be able to access the ZPD and having the learner acculturate into the learning community (Oxford, 1997).

The studies of ZPD alone, including scaffolding, have diverse research themes, thus researchers maintain different interpretations of ZPD according to their research interests (Kinginger, 2002). Amongst the various interpretations, Kinginger (2002) identifies three different interpretations of the zone of proximal development; 'skills' interpretation, 'metalinguistic' interpretation, and 'scaffolding' interpretation.

The 'skills' interpretation perceives language learning as acquisition of skills which strengthen the existing SLA theory such as Krashen's input hypothesis. Gifford and Mulaney (1999, in Kinginger, 2002:253) claim that the task that allows learners to access their ZPD have to be at the $i+1$ in Krashen's term, and there must be an adult or more skilled peers to mediate between the learner and the task.

The 'metalinguistic' interpretation is characterised as collaborative interaction, which is perceived as a mediator of second language learning (Kinginger, 2002). The role of collaborative interaction is elaborated by Swain (2000) that collaborative dialogue acts as knowledge-building dialogue which conveys participants' cognitive activity and the content of the speech can be seen as the outcome of the cognitive activity.

Scaffolding is the assistance that the teacher or more capable students provide through dialogic interaction. This is exemplified in dialogic instruction which takes forms of IRF (initiation-response-feedback) or IRE (initiation-response-evaluation), which are typically found in the teacher-student interaction (Kinginger, 2002).

The term 'scaffolding' was introduced by Wood, Bruner and Ross (1976) describing the assistance that a tutor can provide to a tutee during a task involvement. Scaffolded help is characterised by the following six features: 1) recruiting interest in the task, 2) simplifying the task, 3) maintaining pursuit of the objective, 4) accentuating critical features of the task to display information of the discrepancy between what has been produced and what should be produced, 5) controlling and reducing frustration during problem solving, and 6) demonstrating a model of the act to be performed for completing a task (Wood, et al., 1976:98). Initially, the metaphor of scaffolding was coined to describe expert-novice interaction (Donato, 1994), however Wells (1998) argues that novice-novice interaction is also able to provide scaffolding to participants of interaction as the findings of several studies suggest (e.g. Antón, 1999; DiCamilla & Antón, 1997; Donato, 1994; Villamil & de Guerrero, 1998).

The various interpretations are labelled as the ZPD in the recent research in second language learning, and often, there are multiple interpretations found within one study (e.g., DiCamilla & Antón, 1997; Kobayashi, 2003). The metalinguistic interpretation can be recognised as the acts of sharing task perspectives among L2 learners (DiCamilla & Antón, 1997) and choosing appropriate expressions in the target language (TL) (Kobayashi, 2003) through collaborative interaction. Scaffolding is identified in research as negotiation on content and form (Antón, 1999), use of LI for accessing learners' ZPD (Antón & DiCamilla, 1998; Kobayashi, 2003; Swain & Lapkin, 2000), teacher questions as guide (McCormick & Donato, 2000), and strategic and linguistic help of capable students (Kobayashi, 2003; Ohta, 2000).

In line with the trend of language learning and teaching research, the sociocultural perspective has been widely accepted among CALL researchers. A number of CALL practitioners

and researchers have linked the use of Internet instruments with socio-collaborative language learning (Barson, et al., 1993; Belz, 2002; Lee, 1997, 1998; Salaberry, 1999; Zhao, 1996). Many CALL practitioners regard socio-collaborative language learning as embracing the notion that the language is a tool that is acquired through active and purposeful social interactions with others, while the learner is kept aware of the TL functions and forms (Meskill, 1999; Warschauer, 1997). The advantages of incorporating networked environment and multimedia devices into language classrooms are reported in the following research.

In recent studies in this area, Kinginger (1998) set up a teleconference between French learners at a university in the U.S. and native French speakers at a university in France. During the session, despite the in-advance preparation of the discussion topic, non-native speakers (NNSs) could not follow the conversation with native speakers (NSs). Although the students could not reach their ZPD during the real-time interactions, they could later access the ZPD by analysing their videotaped interactions.

Belz and Kinginger (2002) conducted two case studies looking at the development of pragmatic competence of L2 learners, through acquisition of formal and informal address forms in French and German. The data included emails and transcripts of synchronous chat between learners and NSs of French and German. The exposures in various types of contexts provided by the NSs created authentic situations for using formal and informal forms that resulted in the learners' understanding of appropriate forms.

In Lee's (2004) recent paper of synchronous collaborative interaction with NSs on the Blackboard programme, Spanish learners at a university in the U.S. responded positively to experiencing a real world setting as opposed to a traditional classroom setting. During the interaction, NNSs could produce quality output in the L2 through the scaffoldings provided by the NSs which were characterised as suggesting correct grammar, expressions and ideas. Therefore, the scaffoldings available in the technology integrated, networked environment are the tools, such as recording devices, that enable learners to go back to their own conversations that are already delivered for reflection, and assistance on forms, expressions, pragmatics and ideas through the communication with native speakers.

Sociocultural Theory and Task-based Language Learning

The research into task-based language learning and teaching is widely carried out from both psycholinguistic perspectives (Long's interaction hypothesis, Skehan's cognitive approach and Yule's communicative efficiency) and sociocultural perspectives (Ellis, 2000). The comparison that Ellis (2000) made between the two perspectives concluded that the psycholinguistic approach is beneficial for planning and designing tasks. In contrast, the sociocultural approach is able to provide the insight of the learners' adaptation of tasks, and the process of learning through scaffoldings. A variety of studies of the sociocultural task-based approach have investigated task outcomes, task completion, student activity, mediation, and scaffoldings (e.g. Coughlan & Duff, 1994; Donato, 1994). Much recent research in this field is influenced by sociocultural perspectives of language learning (Ellis, 2003). The tasks employed for the current study were also designed to provide the environment to facilitate student collaborative interaction.

According to Coughlan & Duff (1994), a task is a blueprint of the activity conducted for completing the task. In their study, a picture description task was used to investigate the relationship between the task and activity using the Activity Theory. The findings of the

research suggested that the same task yielded different activities conducted across different participants, as well as the same participant who repeated the same task after more than two years. A similar result was reported by Swain (2001), who too, witnessed a wide range of student behaviour during the task completion. The literature on sociocultural approaches into task-based language learning suggests that sociocultural approaches are employed to understand student activity during the process of task completion, and task-based pedagogy is used to induce collaboration among students to make scaffoldings available.

This paper investigates how collaborative interaction during task completion influences the outcome of the task by employing sociocultural approaches as the analytical tools. The study will also critically analyse the suitability of the sociocultural theory of mediation and the ZPD as analytical tools. The following research questions derived from the review of literature were used as guidelines to look into the above mentioned issues.

1. What are the roles of collaborative interaction in task-based CALL classes?
2. What patterns of collaborative interaction are identified in task-based CALL classes?
3. To what extent does collaborative interaction facilitate or hinder the L2 students' task and project interpretation and completion?

Method

Qualitative research methods, particularly case study, was chosen to investigate the research questions. Case study research was considered to be appropriate for this study because of the small sample size and availability of recording devices. The project was conducted as a pilot study of a longer project, which was conducted in the second half of 2004.

Participants and the Setting

A total of 26 students of Japanese language in Australia and 35 students of EFL in Japan participated in this project. The Australian participants were Year 10 students and the Japanese participants were in their second year of high school. The students were all female and the participating schools were sister schools although the students had no previous contact.

Ten groups of 2-3 Australian students (5 groups each in the morning and afternoon classes, each attended by different students) and ten groups of 3-4 Japanese students were formed for the purpose of this project. Each group was matched with their overseas counterpart to form a larger group to communicate through asynchronous web forum once a week. Asynchronous communication was chosen as it was considered to be able to provide more time for students to think before responding, especially for the students with lower L2 proficiencies (Hron & Friedrich, 2003; Lamy & Goodfellow, 1999). The students used English and Japanese to communicate with each other by completing a few group tasks each week. The language used for communication alternated each week. The tasks were open-ended and were designed to raise awareness of cultural similarities and differences, having them discuss and write about leisure, sport, fashion, shopping, food, and famous people in both countries. The topics were selected based on the Year 10 Japanese curriculum which covers the similar issues. The students were to ask at least one question every week to their counterparts to sustain their interaction on the web forum (Stockwell, 2003).

Data Collection

The researcher attended one 50 minute-morning class and one 50 minute-afternoon class every week for 2 months from the end of April to the end of June 2004 for this pilot study, at a secondary school in Australia for collecting data. Three digital audio devices and video cameras were used to capture each group's interactions and activities, and three VCRs connected to three student computers were used to capture screen movements of selected groups.^a The conversations recorded by the audio devices were transcribed, and translated together with the messages on the web forum, when necessary.^b Apart from collecting data, the researcher's roles in the classroom were to help the students with their target language when the teacher was not available, and to help with the technical side of the project.

Data analysis

The student collaboration were looked at from sociocultural perspectives of cognitive and social mediation, including the zone of proximal development, especially scaffolding, to see the relationship between patterns of collaborative interaction and what was achieved as the result of each collaborative interaction.

In order to identify collaborative interaction, Donato's definitions were used as the guideline. An interaction is regarded as a collaborative when the participants; 1) form social relations developed by their joint work that involves a meaningful core activity; 2) acknowledge themselves as a part of the core activity whereby an individual has a role for achieving a larger goal; 3) possess individual knowledge which will be shared by other members for constructing new knowledge that creates coherence among them as the result of social relations (Donato, 2004:287). In this study, therefore, collaborative interaction is defined as the interaction related to the tasks for web forum exchange.

Among a numerous papers based on studies of interaction in language classrooms (Liang, 2004; Myers, 2002; Storch, 2002a, 2002b, 2004), Myers' (2000) study was considered to be the most relevant for data analysis, as it looked at patterns in collaborative interaction among groups of students, by using sociocultural theory as the analytical tool.

Myers' (2000) study focused on task interpretation and effectiveness in a French L2 classroom by identifying the characteristics of collaborative interactions. Since the current study also investigates the patterns of collaborative interaction and task interpretation, Myers' study was employed as a framework for the data analysis. In her study, the students were given a task to be completed with their group members using *passé composé* as the grammatical focus for this task. Through her study, she identified four different types of collaborative group interactions, which are 1) leader and followers, 2) turn-taking, 3) cooperative production, and 4) individual production.

Leader and followers indicates that a group leader supplies all the answers to tasks and the followers give affirmations. Turn-taking is seen when all the group members provide equal amount of contributions for task completion. Cooperative production occurs when each group member offers a partial (not a whole) answer which is to be compiled as a whole answer. The last category, individual production, may not strictly be considered as an interaction, however Myers (2000) explains that students come up with many different solutions and come to conclusions by themselves, through self-regulation. However, individual

production is not within the scope of the current study, therefore the category will not be considered as a part of collaborative interaction. Although the tasks used in the current study are more open-ended than Myers (see Appendix A), these categories for classifying the patterns of collaborative interactions are regarded as beneficial to analyse the nature of each collaborative event and the outcome, as the result of collaboration.

Findings

In the collected data, two types of collaborative interaction were identified, *turn-taking* and *cooperative production*. Although there are only two categories identified, the nature of each interaction was very different. Sociocultural theories of mediation and scaffolding were used to examine each excerpt categorised under *turn-taking* and *cooperative production*. Myers (2000) mentions that talking is an important means of mediation, which learners use to regulate tasks. Scaffolding was identified as any form of assistance available through collaborative interaction in order to reach the outcome of collaborative interaction.

Turn-taking

The collaborative interaction categorised under turn-taking shows clear division of labour between participating students (Myers, 2000). The first example shows that M and SA collaboratively decide what they are going to write about for the web forum postings (Excerpt 1).

Excerpt 1

Group 1—members: M*, SA, ST (* indicates a typist)

1. M: What is the shop they can't miss?
2. SA: Does that mean, it's typically Australian? (ST turns around and starts talking to other group members.)
3. M: Yeah.
4. SA: Speaky's? Roxy?
5. M: How do you write?
6. SA, M: *Su-pi-ki-zu* (The word "Speaky's" converted into Japanese syllables.)
7. M: *Supikizu*

In this excerpt, M mostly poses questions or raises issues and SA offers answers. M's question in line 1 suggests that Group 1 is going to work on Task 4 (see Appendix A) as she is reading out a part of the task instruction for Task 4. SA offers her interpretation of the task in line 2 and M agrees (line 3). SA then provides a couple of actual examples to elaborate the discussion (line 4). Then M agrees with SA and asks for the spelling in Japanese to type that in (line 5). In line 6, SA and M collaboratively split a word "Speaky's" into syllables to make it sound like Japanese. The lines 1 and 2 show that by voicing these questions, M and SA were regulating the task and mediating their interpretation of the task. As the result of mediation, they confirmed that they had the same view of how they tackle this task (line 2, 3). Then SA offers the names of specific shops, which can be considered as scaffolding for

advancing the process of task completion (line 4). The outcome of this interaction shows that they come to a conclusion that they write about a typically Australian shop "Speaky's" (lines 5-7).

The following excerpt is another turn-taking interaction from the Group 1 data (Excerpt 2).

Excerpt 2

Group 1—members: M*, SA, ST (* indicates a typist)

1. M: Do you wanna add "please rewrite"? (M opens a red folder and points at a page.)
2. SA: Is that the one?
3. M: Can you read it out?
4. ST, SA: *Tsu... Sugu* (*Tsu* [mispronunciation]... soon)
5. M: *Zu?* (*Zu?* [mispronunciation] ST checking the screen.)
6. ST, SA: *Sugu, Su, Gu!* (Soon, SOON! [emphasised syllables])
7. M: *Sugu* (Soon M types.)
8. SA: *Tegami* (Letters)
9. M: *Tegami* (Letters M types.)
10. SA: *O kudasai* (Please give.)
11. M: *O kudasai* (Please give. M types.)

This interaction is different from the previous example as M initiates a conversation and the other two (SA and ST) provide the information demanded by M. This example may look similar to *leader and followers* interaction pattern but according to Myers' (2000) example, followers only acknowledge or agree to the leader and they do not supply further input as SA and ST do. The first few turns (lines 1-3) are considered as mediation as M shows her intention of adding an extra sentence (line 1) by saying and pointing at a relevant page at her folder. SA then confirms that the sentence M wanted is on the same sentence she found on the folder (line 2). M then regulates the flow of this interaction by asking her group members to read it out (line 3). SA and ST then provide information that M requested (line 4). The mispronunciation, delivered by M (line 5), shows that although M had a clear idea of what to do, she still needed help from her members as she could not produce the sentence by herself. Therefore, this excerpt shows that supply of scaffolding does not only occur when a helper decides to provide it but scaffolding can be requested from someone who knows how other people can help him or her by giving directions (line 1—see the description of classroom movements; line 3). The outcome of this collaborative interaction is the joint production of a sentence "*Sugu tegami o kudasai*" (Please give us letters soon) (lines 7-11).

The next excerpt collected from Group 4's interaction differs from previous excerpts since the interaction occurred while the students (AL and AN) were reading a message posted by their Japanese partners, rather than composing a message.

Excerpt 3

Group 4—members: AL*, AN, R -researcher (* indicates a typist)

1. AL: *Watashi ga... Shugaku... Shugaku...* (I... Study... Study... † [Reading the computer screen])
2. AN: Study?
3. AN: *Shugaku ryoko* (School excursion. Reading the computer screen without knowing the meaning of the word)
4. AL: Practice?
5. AL: Ah, R, what is 'shugaku'?
6. R: *Shugaku?*
7. AL: *Shugaku ryoko.*
8. AL: School work?
9. R: *Shugaku ryoko.* Ah, school excursion.
10. AL: School excursion.
11. AL: Thank you.

† "Study" is not the exact translation—it is somewhat the combinations of 'study' and 'master'

In line 1, AL is trying to read and understand the posting written in Japanese but she is struggling to understand the meaning of "shugaku." AN then guesses what "shugaku" might be by saying "study?" (line 2) AL reads out the words "shugaku ryoko" without knowing the meaning (line 3). AN again attempts to guess what it is (line 2). Despite AN's attempted scaffolding (lines 2, 4), they could not figure out the meanings of unknown words, therefore AL asks the researcher what "shugaku" means (line 5). The researcher's repetition of AL's utterance (line 6) elicited AL's recast (line 7) which followed by her guessed interpretation "school work?" (line 8) AL finally obtains the answer from the researcher at the end (line 9). Although collaborative reading through interaction was unsuccessful in this case, this example shows that collaborative interaction can occur while students are reading the same text.

The following turn-taking excerpt collected from Group 8 interaction shows that each group member has a certain role within a group. L raises questions, C offers guidance, and E provides solutions. The first half of the interaction involves L and C only.

Excerpt 4

Group 8—members: C*, E, L (* indicates a typist)

1. L: What should we write?
2. C: How about accessories?
3. L: Do you know what "accessory" is?
4. C: Look up.
5. E: Jewellery. (L opens a dictionary and gives it to E)
6. C: Jewelleeery favourite *wa desu*. (Jewelleeery favourite *wa* [subject marker] *desu* [end of sentence marker] [ungrammatical sentence])

7. E: *Ho-o-seki wa* (A jewel is [with wrong pronunciation] [Looking at a dictionary])
8. C: *Ho-u-se, yah.* (A jewel [incomplete word but corrected pronunciation], yah. [Looking at a dictionary])
9. E: *Ho-u-seki rui* (Je-wel-lery [without fluency] [Looking at a dictionary])
10. C: *Houseki rui.* (Jewellery [fluent] [Typing 'houseki rui'])

By asking the question (line 1), L sets out the topic for the subsequent interaction. C offers her idea of writing about accessories (line 2). L then asks her group members if they know how to say "accessory" in Japanese (line 3). The line 3 shows L's agreement of using "accessories" as the topic of their postings. The lines 1-3 are considered to be mediation as they are expressing their ideas through speech to regulate what they were about to do. With C's suggestion to look up "accessory" in a dictionary (line 4), L opens her dictionary and gives it to E (see classroom movement—line 5) who finds a relevant definition under "jewellery" instead of "accessory." (line 5) Then in the second half of the interaction (lines 5-10), E offers the definition (line 7) and C guides E to retrieve the correct form of the word they want (line 8, 9). In line 7, E reads out the definition out of the dictionary by pronouncing "*ho-o-seki*" instead of the correct form "*ho-u-seki*." C is also looking at the same dictionary with E but she immediately corrects the pronunciation (line 8) as she needs to type in the correct form to choose the correct characters from a list of characters which are automatically generated by the computer. In line 9, E finds the word they want which is "*ho-u-seki rui*" (jewellery) as opposed to the previous form, "*ho-u-seki*" (a jewel). As the result of this collaborative interaction, they could decide the content of their postings (line 1-3) and choose the right word for jewellery in Japanese (line 10). As each group member had a specific role within a group, the scaffolding that each member provided were different. L initiated the interaction to prompt the entire interaction for task completion (lines 1, 3). C provided tactics for learning by suggesting to look it up in a dictionary (line 4) and making sure to type a L2 word in with the correct spelling (line 8). E provided her research skills and the result of her research (lines 5, 7, 10).

Turn-taking interaction can occur in various ways. Students decide on the direction of how to convey a task (Excerpts 1 and 4), construct an L2 sentence collaboratively (Excerpt 2), attempt to decode L2 texts collaboratively (Excerpt 3), and find appropriate words and form in L2 (Excerpt 4). As it is seen in the examples given above, in turn-taking interaction, each speaker provides one concrete answer in each turn rather than giving incomplete answers. In cooperative production on the other hand, the participants only contribute fragments of a whole answer.

Cooperative Production

Cooperative production within collaborative interactions seems to be another commonly identified pattern across the data. When students are engaged in this type of interaction, they constantly work on a common issue cooperatively and collaboratively to achieve their designated goal in many different ways. The first example from Group 1 interaction shows that the students contributed their knowledge to compose one sentence with the teaching assistant's (TA) help (Excerpt 5).

Excerpt 5

Group I—members: M*, SA, ST (* indicates a typist), TA—teaching assistant

1. TA: What is *supikizu*? (TA walks over and looks at Group I's computer screen.)
2. M: It's a shop.
3. TA: Expensive? (M nods.)
4. M: How do you say expensive?
5. SA: *Takai*. (Expensive)
6. ST: *Takai desu*. (It is expensive.)
7. M: How would you write *Speaky's* is expensive? (M asks a question to TA.)
8. M: *Speaky's wa takai desu?* (*Speaky's* is expensive?)
9. TA: Mmm *Speaky's no nani-nani ga takai desu*. Ok? (Mmm, *Speaky's* 'something' is expensive. Ok?)

The TA was a university student in Japan who came to Australia on the working holidays. She was new to Australia and her English skill was limited at the time of data collection. Therefore, the questions she asked to members of the Group I were assumed to have come out of curiosity rather than her teaching strategy (line 1). The question asked by TA (line 3) triggers M's question (line 4), which served as the guide for composing a L2 sentence collaboratively (lines 5-8). Instead of TA answering the question, SA offers her answer to M's question, which is not a complete sentence (line 5). ST however, offers her answer built upon SA's answer providing a complete sentence (line 6). M then asks TA a question about the sentence she wants to translate into Japanese (line 7) but she immediately offers her own version of translation to see if it is correct (line 8). Inspired by her group members' previous utterances (lines 5, 6), M's utterances (lines 7, 8) functioned as mediation of her cognitive process and hypothesis testing. The scaffolding provided by SA and ST ("*takai*" and "*desu*" in lines 5 and 6) were incorporated into M's utterance "*Speaky's wa takai desu?*" (line 8). In the final utterance (line 9), the teaching assistant corrects M's sentence by explaining that she should put an object in between "*no*" and "*wa takai desu*" in Japanese. The students successfully composed a part of a sentence "*Speaky's...wa takai desu*" however, the final product on the web forum shows that they failed to produce a grammatically correct sentence despite TA's suggestion (*Supikizu no takai desu* instead of *Supikizu no something ga takai desu...*). This indicates that the scaffolding will not serve as it should be if it does not match the learners' current L2 level, even if it is available (Kinginger, 1998).

The next interaction occurred a few minutes after the previous Group I interaction. They are now trying to add more length to the sentence they have already composed (Excerpt 5).

Excerpt 6

Group I—members: M*, SA, ST (* indicates a typist)

1. M: Trendy (M is looking at a red folder containing expression sheets.)
2. ST: Trendy? Yah.
3. M: But it's...

4. M: *To-ren-dii* is better. (Trendy [with a Japanese accent])
5. M: It's trendy, it's like expensive but it's cheap. (M chuckles.)
6. M: *Ga...uhm* (But...uhm)
7. ST: Comma.
8. M: *To?*
9. M: *Re?*
10. M, SA: *N-dii*
11. M: I don't know how you lengthen it.
12. ST: It's got a small "i"
13. ST: *Hiragana*. (ST finds a word equivalent to "trendy" in Japanese using hiragana on a textbook. She flashes cover of the text book to M.)
14. M: What is it?
15. ST: *Rii-yuu-ko* (Trendy [without fluency])
16. SA: *Rii-yuu-ko na* (Trendy [without fluency and with a wrong particle, 'na'])
17. M: But I think *na* is...
18. SA: That's...
19. ST: Yeah.
20. M: Let's lengthen '*kou*.' *Ryuukou desu*. (Let's lengthen '*kou*.' It is trendy. [M looks at the textbook and types in '*Ryuukou desu*'])
21. M: *Sayonara!* (Bye!)

M and ST decide to use a word "trendy" (lines 1-4 in Excerpt 6). M tries to convert the word "trendy" into Japanese (lines 8-9). By saying "trendy" with a Japanese accent (lines 8, 9), M demonstrates her strategy to convert an English word into Japanese (mediation). SA joins in this process (line 10). M finds it difficult to lengthen "dii" by typing and ST gives her idea how to lengthen it (lines 11, 12). So far all the members are trying to figure out the best way to write "trendy" in katakana by contributing a few ideas each (lines 8-12). ST then suddenly finds a Japanese equivalent word to "trendy" on the textbook in her hands and flashes it to M, saying "*hiragana*" (line 13). ST reads out the word "*rii-yuu-ko*" (line 15) and SA offers an incorrect particle "*na*" after "*rii-yuu-ko*" (line 16). M however, disagrees with adding the particle "*na*" and somehow the rest of the members agree with M (lines 17-19). In this sequence, all the members contributed their opinions of what form the Japanese word "*rii-yuu-ko*" should take (lines 15-19). Finally, with the help of a textbook, M draws a conclusion that "*ko*" should be written as "*kou*" and "*rii-yuu-ko*" should be spelt "*ryuukou*" (line 20). The outcome of this interaction shows that they have added a clause to the previously constructed sentence (in Excerpt 5), "*Supikizu no takai desu ga, ryuukou desu.*" (see Appendix B)

The last short example for cooperative production shows that collaboration can happen not only when they compose sentences in their L2 but can it happen during sentence construction in their L1 (Excerpt 7). AL and AN are composing a message in English for their Japanese partners to read.

Excerpt 7

Group 4—members: AL*, AN (* indicates a typist)

1. AL: We share... (AL is typing, AN is looking at the screen.)
2. AL: We have the same taste...
3. AN: But the taste is not good, though...
4. AL: We like the same music and share CDs.

AL is talking and typing at the same time (lines 1, 2). AN realises and points out that the expression that AL uses in a sentence may be too difficult for their EFL partners to understand (line 3). This resulted in AL modifying her output to be more comprehensible for English learners (line 4). A similar instance occurred in Kobayashi's (2003) study in that the students carefully chose words according to their audience's L2 proficiency during their preparation of class presentation.

In the excerpts categorised under this section, the distinction between mediation and scaffolding is more blur than turn-taking interactions as mediating utterance becomes the scaffolding for the following utterances (Excerpt 5, lines 3-8; Excerpt 6, lines 8-10, 15-19; Excerpt 7, lines 2-4). The possible explanation for this phenomenon is that the student speech that mediates their cognitive process or socialisation can act as scaffolding for their group members as well (Excerpt 5, lines 4-8; Excerpt 7, lines 2-4). Also, the students often composed words or sentences by building upon their previous utterances (Excerpt 6, lines 5-8; Excerpt 7, lines 8-10, lines 15-16) which created a situation like a mediating utterance (e.g. Excerpt 5, line 4) triggers a scaffolding utterance (e.g. Excerpt 5, line 5), and the scaffolding utterance triggers another scaffolding utterance and so forth (Excerpt 5, lines 6-8).

The excerpts in this section showed that each student does not have to have the answer to everything but they can co-construct their knowledge by combining each student's contribution. Cooperative production also proved that it helps students to improve their tactics of completing their task as it is illustrated in Excerpt 7 (lines 2-4).

Discussion

The Outcome and Patterns of Collaborative Interaction

In this study, only *turn-taking* and *cooperative production* were identified as patterns of group interaction (research question 2). This outcome could be interpreted positively as it shows that the students pooled their ideas and opinions spontaneously rather than being passive participants (*leader and followers*) or working alone (*individual production*). The collected data was segmented according to the outcome of each collaborative interaction, and all the excerpts of collaborative interaction presented in this paper had some sort of outcomes as the result of collaborative interaction, such as choosing the correct word and form for 'jewellery' in L2 (Excerpt 4). The findings of the study have shown that the students were able to co-construct knowledge through collaborative interaction as displayed in excerpts 2, 4, 5, 6 (research question 1). The difference between the current study and Myers' (2000) study is the nature of assigned tasks. In Myers' (2000) study, the students were interacting to compose sentences with a particular grammatical form. On the contrary, the tasks designed

for this study were open-ended and focused on the content. This difference however, made it difficult to analyse the task outcome coherently as it only allows us to see a fragment of the whole interaction occurred to complete each open-ended task.

Process of Task Interpretation and Completion

This analytical tool displayed that there are a series of collaborative interactions embedded in the interaction occurred that lead to the completion of an open-ended task. However, the research question 3 remains unanswered at this stage of the research as this pilot study revealed that there were too many different variety of answers to the task existed, and more through analysis would be required possibly by looking at group dynamics or student L2 proficiency. As the task is a blue print of activities (Coughlan & Duff, 1994), there are no correct or incorrect answers to the task, however, the various task outcomes suggest that collaborative interaction may not necessarily help lead the participants to the direction that the educator wants them to achieve.

Conclusion

Drawing upon Vygotskian sociocultural perspectives, the present paper attempted to grasp the role of collaborative interaction as the process of completing an open-ended task by looking at patterns and outcomes of interaction.

During the course of task interpretation, the students' L1 played an extremely important role in both classes. They used L1 to resolve problems, regulate tasks, and co-construct sentences in the L2. This is similar to the findings of Antón and DiCamilla's (1998) study. The use of the TL may look sporadic on the surface, however, as secondary school students with very limited knowledge of the L2, they succeeded in co-constructing sentences and reading messages written the TL through collaborative interaction, which often served as scaffolding.

Sociocultural approaches of mediation and the zone of proximal development were useful for analysing interaction and its outcome, the role of each participant in interaction, and how and what learners are trying to learn through interaction. However, the limitation of these analytical tools became apparent when we try to understand how students work to complete open-ended tasks, as the tools do not allow us to see the entire sequence of involvement of task completion. Without a tool that enables us to observe the entire progression of involvement in one sequence, the true quality and efficacy of the task may not be completely revealed.

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Appendices

Appendix A

Tasks for June 2004

JUNE—SHOPPING ショッピング

WEEK 1 (write in English 英語使用): 01/06 (Japan), 04/06 (Australia)

Discuss in Groups グループで話し合ってください

- Write replies to your partners. パートナーに返事(へんじ)を書(か)いてください。
- Decide 2-3 restaurants or cafes you like in your city. Describe 1) what sort of food you can eat there (eg. Italian, Japanese, Indian, etc.), 2) the best/favourite dish (eg. mushroom pizza, vegetarian sushi, tandoori chicken, etc) dish you can eat for each restaurant. あなたの町(まち)にある好(す)きなレストランやカフェを2-3選(えら)んでください。1)それぞれのレストランまたはカフェでどんな食べ物がたべられるか(例えば、イタリアン、日本食、インド料理など)、2)それぞれのレストランまたはカフェで一番好きな食べ物はなにか(例えば、マッシュルームピザ、ベジタリアンすし、タンドーリチキンなど)を説明(せつめい)してください。
- Ask questions to your partners. パートナーに質問(しつもん)してください。

Individual Work for English Speakers

- Decide your favourite dish. Tell your partner where you can eat it (e.g. xxx restaurant in Geelong, home, etc.) すきな食べ物(一品)をきめてください。それはどこで食べられるのかパートナーに説明(せつめい)してください。(例えば、ジロングにあるXXX レストラン、家でなど)

WEEK 2 for Japanese students (write in English 英語使用): 08/06

(Australia-school holiday)

Discuss in Groups グループで話し合ってください

Look at the web sites listed under 'Geelong Info' on the web forum home page. Decide where you like to visit in Geelong and its surrounding areas. Ask any questions to your partners at SHC about Geelong and other places.

ウェブフォーラムのホームページにあるGeelong Infoへいき、ジロングやその周辺の地域についてのウェブサイトを見て、いつてみたいところをきめてください。SHCのパートナーにジロングなどについて色んな質問をしてください。

WEEK 3 (write in English 英語使用): 15/06 (Japan), 18/06 (Australia)

Discuss in Groups グループで話し合ってください

1. Write replies to your partners. パートナーに返事(へんじ)を書(か)いてください。
2. Decide one favourite shop in your city for each category. Explain why you like them. あなたの町にある好きな店(みせ)をカテゴリーごとにきめて、なぜすきなのかを説明(せつめい)してください。
 - a. Apparel (Clothes, shoes, etc.) 服飾(ふく) (服、靴など)
 - b. CDs CD
 - c. A shop of your choice outside of the categories shown above カテゴリー外の好きな店
3. Ask questions to your partners. パートナーに質問(しつもん)してください。
4. Discuss in Groups グループで話し合ってください (Australian students only オーストラリアの生徒のみ)
Decide and describe briefly in **Japanese** about ONE shop that your Japanese partners can't miss when they come to Geelong. 日本にいるパートナーがジロングにきたときに必ず行ったほうがいい店をひとつ選び、説明してください。
5. Look at your partners' **group** messages. Choose one grammatical mistake and correct it for them. DON'T correct individual messages choose only group messages.
パートナーのグループメッセージをみて文法の間違えを一カ所訂正してください。グループからとしてだされたメッセージだけを訂正してください。個人で書いたメッセージは直さないでください。

The task analysed in this paper: Task 4

Decide and describe briefly in **Japanese** about ONE shop that your Japanese partners can't miss when they come to Geelong.

日本にいるパートナーがジロングにきたときに必ず行ったほうがいい店をひとつ選び、説明してください。(Nihon ni iru paatonaa ga Girongu ni kitatoki ni kanarazu ittahougaii mise o hitotsu erabi, setsumeishi tekudasai.)

Appendix B

Web forum message produced by Group 1

Posted at Jun 18/2004 09:44 AM:

St, Sa and M: おげんきですか。げんきです。スピキズに行ったがありますか。スピキズの高いですが、りゅうこうです。すぐてがみてください。さよなら。

Endnotes

ⁱ Although purposeful sampling is recommended by a few researchers (Creswell, 1998; Burns, 2000), convenience (Merriam, 1998; Richards, 2003) sampling was employed for this research as the students were often absent from the classes and the groups of 2 students needed to work in solitary in this case.

ⁱⁱ The researcher documented any notable events that may influence the outcome of task (e.g. computer hitches, change of student behaviour in front of cameras, etc.) in the classroom, but observation notes will be only used as support.