Collaborative tasks in Web conferencing: A case study on Chinese online

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This case study aimed to explore best practice in applying task-based language teaching (TBLT) via a Web-conferencing tool, Blackboard Collaborate, in a beginners' online Chinese course by evaluating the pedagogical values and limitations of the software and the tasks designed. Chapelle's (2001) criteria for computer-assisted language learning (CALL) task appropriateness were adopted and adapted to evaluate five tasks designed for an online environment in terms of practicality, language learning potential, learner fit, authenticity, and positive effects. Sixteen undergraduate on-campus students who enrolled in an introductory Chinese language course participated in this project. Five fortnightly 1-hour online sessions were conducted, which included two jigsaw tasks, two decision-making tasks, and one information-gap task. Learners' interaction in the online sessions was recorded and transcribed to conduct a thorough investigation of learners' negotiation actions in peer-to-peer interaction. Their experiences of using Blackboard Collaborate and carrying out the tasks were recorded in in-depth interviews and pre- and post-session questionnaires.

Keywords: CALL evaluation, computer-mediated communication (CMC), TBLT, Web conferencing, second language acquisition (SLA), online Chinese teaching

1. Introduction

Over the last decades, there has been growing interest in applying computer-mediated communication (CMC), which can overcome the temporal and geographic barriers inherent in the classroom learning environment.

3

Derived from interactionist SLA, synchronous CMC (SCMC) has been shown to have great potential in facilitating learner–learner interaction (Beauvois, 1992; Blake, 2000; Kelm, 1992; Kern, 1995; Warschauer, 1996), increasing equality of participation (Sullivan & Pratt, 1996; Warschauer, 1996), enhancing language output (Beauvois, 1995; Chun, 1994; Kelm, 1992; Kern, 1995; Warschauer, 1996), and contributing to negotiation of meaning (Blake, 2000, 2005; Fernández-García & Martínez-Arbelaiz, 2002, 2003; Fidalgo-Eick, 2001; Keller-Lally, 2006; Pellettieri, 2000; Smith, 2003; Wang, 2006; Yuksel & Inan, 2014).

Recently, a substantial body of research on SCMC has focused on communication and interaction in multimodal learning environments and its influence on learners' second language acquisition (Hampel & Stickler, 2012; Örnberg Berglund, 2009; Satar, 2013; Shih, 2014; Stickler & Shi, 2013; Wigham & Chanier, 2013). Kress and van Leeuwen (2001: 20) define multimodality as 'the use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined – they may for instance reinforce each other […], fulfil complementary roles […], or [be] hierarchically ordered'.

Multimodal CMC such as audio/video conferencing, which incorporates images, audio, video, and text, provides learners with efficient and diverse modes of communication. Although the implementation of these tools in foreign language classes has become more pervasive, Hampel and Stickler (2012: 119) argue that 'there is a lack of research that examines the impact of this combined use of tools on interaction and analyses multimodal CMC in an online language classroom'.

The popularity of task-based language teaching (TBLT) in the context of CMC has drawn increasing attention from both researchers and language teachers (Thomas & Reinders, 2010). Nevertheless, there is a lack of research into how to evaluate the appropriateness of Web-conferencing tools and tasks. Stockwell (2010: 102) argues, '[t]here is a need, then, to investigate how task-based learning (TBL) may be conducted in [multimodal] environments, and how the medium has the potential to affect the way in which learners interact, the language they produce and the strategies they use'.

This study was performed with the purpose of bridging this gap by adapting and adopting Chapelle's (2001) criteria for Web-conferencing tools and task design, and it aimed to investigate the influence of the multimodal environment on learners' interaction. The paper presents findings from an empirical study in this context.

2. Criteria for evaluating the appropriateness of Web-conference-based collaborative tasks

In this study, Chapelle's (2001) six criteria for CALL task appropriateness and Wang's (2008) criteria for evaluating meaning-focused videoconferencing tasks were used as guidelines for evaluation. The criteria for evaluating Web conferencing tools and collaborative tasks in the current study are summarised in Table 1.

2.1 Practicality

According to Chapelle (2001), practicality refers to the degree of easy implementation of a CALL task in a certain language teaching setting, including the availability of hardware and software, and the assistance offered by knowledgeable personnel to deal with any unforeseen issues. Following Wang's (2007) criteria, practicality is the first step in a decision to

Table 1. Criteria for evaluating Web conferencing tools and collaborative tasks in the current study

Criteria	Descriptions
Practicality	The fit between tasks and the feature of the Web-conferencing tool(s) to support collaborative task completion
Language learning potential	The extent to which learners' attention is directed towards the forms of the language while engaging in meaning-based tasks
	Learners' improvement in the target language, especially in communicative competence
	The appropriateness of tasks in facilitating collaborative learning
Learner fit	The fit between the characteristics of learners and those of tasks, such as:
	The fit between the level of the difficulty of the tasks and the level of proficiency of the learners
	The fit between the amount of opportunity for engagement or interaction with learners' expectation
Authenticity	The degree of correspondence between the Web-conferencing-based activities and target language activities of interest to learners outside the classroom
Positive effects	The positive effects of the Web conferencing-based tasks on those who participate in them (e.g., the influence of the multimodal environment, the influence on learners' confidence in learning, etc.)

use a certain Web-conferencing tool in a specific learning environment. The reason being that technical capacities of software have a direct influence on learners' task completion. As Wang (2007, p. 593) points out, practicality is 'the precondition for task performance'.

In this study, practicality concerns how easy it is for the participants, including the learners and the teacher, to carry out collaborative tasks in the Web-conferencing-based environment; in other words, whether the feature of the technology can support the teacher and the participants' online multimodal interaction. Relevant factors, such as the availability of hardware and software (Chapelle, 2001), user friendliness, the acceptability of video and audio quality (Wang, 2007), the stability of the software, and other features of pedagogical values, are considered.

2.2 Language-learning potential

Chapelle (2001, p. 55) notes that language learning refers to 'the extent to which the activity can be considered to be a language learning activity rather than simply an opportunity for language use'. Further, she differentiates language learning and language use as 'the extent to which the task promotes beneficial focus on form' (p. 55). In Wang's (2007) criteria, learners' perceptions of their target language improvement are also taken into account. Since communicative competence is one of the key aspects of language learning (see Canale & Swain, 1981; Hymes, 1971; Sauro, 2011), whether tasks can promote learners' collaborative learning and achieve communication goals plays a vital role in language learning potential.

2.2.1 Focus on form. It is well accepted that learners notice of and attention to linguistic form is important for their second language acquisition (Robinson, 1995; Schmidt, 1990).

Focus on form is defined by Long (1988) as learners' attention to form when they are engaging in meaningful tasks. In the process of meaning-based task completion, certain conditions that can direct learners' attention to language form, when interaction and communication break down due to unknown language forms and vocabulary, are argued to be beneficial to their language learning.

The existing literature has shown that interactional modification may facilitate learners' SLA by temporarily drawing their attention to focus on form in meaning-based tasks (Long & Robinson, 1998). In this study, the incidences of interactional modification in learner–learner interaction were coded and analysed according to Varonis and Gass's model (see Figure 1). In their study, they define non-understanding routines as 'exchanges in which there is some overt indication that understanding between participants has not been complete' (1985, p. 73).
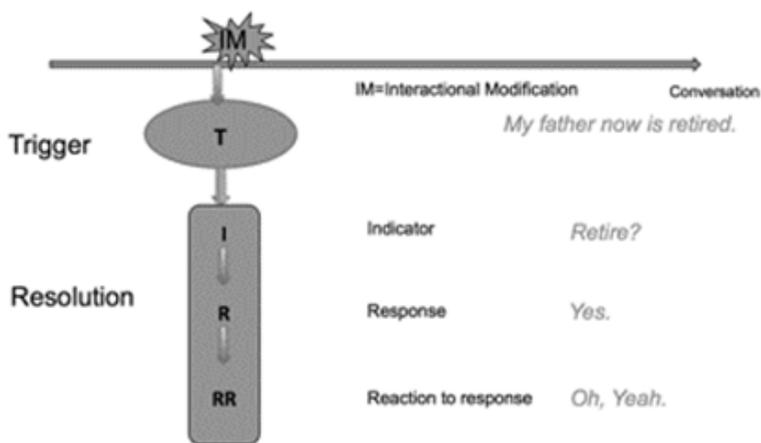

Figure 1. Varonis and Gass's (1985) model of negotiation for meaning (Adapted from Wang, 2006, example from Varonis & Gass, 1985)

Their model consists of two major phases: (1) a trigger and (2) a resolution. The trigger (T) refers to 'an utterance or portion of an utterance on the part of the speaker which results in some indication of non-understanding on the part of the hearer' (Varonis & Gass, 1985, p. 74). The resolution encompasses three primes, including an indicator (I), which is an utterance to signal the non-understanding and 'push down' the conversation, and a response (R), which is the reaction to the indicator, 'acknowledging the non-understanding in some way' (Varonis & Gass, 1985, p. 75). The last prime, the reaction to the response (RR), which is an optional unit, completes the routine. Comprehension checks can be found between the four primes.

In Wang's (2007) study, two types of breakdown are categorised: (1) a breakdown due to non-understanding, which is adopted from Varonis and Gass's (1985) study, and (2) a breakdown due to a request for new words. In the current data, both categories have been found, and more examples of impasses due to requests for new expressions have been identified as the third category.

2.2.2 Improvement in the target language. Wang (2008) added learners' perceived language improvement to her evaluation criteria for videoconferencing tools and tasks. Besides focus on form, learners' improvement in Chinese, particularly listening, speaking skills, and communicative competence, were the focal points in the task design. In the present study, other aspects of Chinese language learning, such as writing and recognising Chinese characters, have also been considered.

2.2.3 Collaborative learning. Facilitating learners' collaborative learning is one of the primary concerns in the current study. Computer-supported collaborative learning (CSCL), whose principles are derived from Vygotsky cultural psychology approach , concerns learners' 'collaborative learning' in CMC environments. Previous studies reported that compared to face-to-face interaction, collaboration supported by CMC is considered weak in social presence (Kirschner, 2002). Different from cooperative learning, in which each learner completes parts of a task, collaborative learning requires learners to negotiate with partners to work together (Beatty & Nunan, 2004).

2.3 Learner fit

Learner fit refers to the fit between learners' characteristics and tasks' characteristics. Learners' characteristics include their language ability, proficiency, willingness to communicate, age, and learning style (Chapelle, 2001). Task characteristics refer to difficulty level, whether the tasks can provide learners opportunities to engage in the tasks, and whether the tasks allow learners to use a range of language structures that are suitable for their language proficiency (Skehan, 1998). Moreover, from a sociocultural theories perspective, when deciding task difficulty level, instructors need to consider learners' zone of proximal development (ZPD). Tasks that are already known to the learners or are too difficult and beyond their grasp are not considered beneficial to language acquisition.

2.4 Authenticity

Many scholars argue that engaging in authentic tasks is one of the best ways to acquire the target language. Egbert (2005) defines an authentic task as 'one that learners perceive they will use outside of class in their real world or that parallels or replicates real functions beyond the classroom' (p. 6). As one of the conditions for optimal online language learning, authenticity has a significant influence on learners' engagement and willingness to participate in the tasks (Chapelle, 2001). Nunan (1993) states that applying authentic tasks has a positive influence on facilitating learners' meaningful interaction, and, therefore, may encourage comprehensible output production and learners' engagement. In terms of authenticity in a Web-conferencing-based environment, tasks can be relevant to students' real life or amended to foster their real-life communication skills.

2.5 Positive effects

According to Chapelle (2001), the notion of positive effects incorporates diversified improvements, beyond language learning potential, that learners may obtain from carrying out tasks. An ideal language class not only teaches language itself but also helps learners to develop metacognitive skills (Oxford, 1990), their interest in the target language and

culture, and pragmatic abilities (Chapelle, 2001). In this study, factors such as the effects of the multimodal environment and the influence on learners' confidence in learning have been considered.

3. Method

In this study, the predominant purpose was to evaluate the appropriateness of the Web-conferencing tool and the collaborative tasks designed (Egbert, Chao, & Hanson-Smith, 1999; Larsen-Freeman & Long, 1991; Long, 1996; Pica, 1994; Spolsky, 1989). A case study approach was adopted to apply the proposed criteria to evaluate both the software and pedagogical values of the tasks (Yin, 2009). As Jamieson and Chapelle (2010) state, today's pressing question is 'to what extent a particular type of CALL material can be argued to be appropriate for a given group of learners at a given point in time' (p. 2). In the current study, the researcher was also the language instructor who identified issues and problems in teaching practice. Teaching interventions may help to make improvements only in certain educational contexts (Allwright & Bailey, 1991). Consequently, the teacher as a researcher is also an effective solution for the dilemma where teachers may find others' research findings inapplicable to their own teaching situations (Crookes, 1993).

3.1 Context of the study

This study involved a two-stage project. In the first stage, the researchers investigated how the learners' and the teacher's interactions were affected by the synchronous multimodal environment (see Authors, forthcoming). The current study focuses on the results from the second research stage.

Sixteen undergraduate on-campus students who enrolled in the second semester of an introductory Chinese language class participated in the current study (see Table 2 for their participation in the online sessions). Four of them (Students 1 to 4) had participated in two online sessions in the first stage, and Student 9 attended one online session in the first stage. They had been studying Chinese at University level for one semester prior to the second stage. None of them had any knowledge of Chinese before their enrolment.

Table 2. The learners' participation in the five online tutorial sessions

Online sessions	The 1st online session (Information-gap)	The 2nd online session (Decision-making)	The 3rd online session (Jigsaw)	The 4th online session (Decision-making)	The 5th online session (Jigsaw)
Group 1	St 5, St 4	St 3, St 9	St 3, St 9	St 12, St 15	St 4, St 5
Group 2	St 3, St 7	St 4, St 11, St 12,	St 11, St 12, St 15	St 3, St 9	St 11, St 12
Group 3	St 11, St 12	St 2, St 10, St 13	St 5, St 6	St 4, St 5, St 11,	St 3, St 9
Group 4	St 1, St 13	St 1, St 5, St 4	St 1, St 10	St 1, St 2, St 16	St 1, St 10, St 13
Group 5	St 9, St 10		St 2, St 14	St 10, St 13	St 2, St 6

Blackboard Collaborate (see Figure 2) is a Web-conferencing tool that enables users to communicate with each other via video, audio, text chat, feedback tools (e.g., emoticons, raised hands, and polling), and a whiteboard (see Autho, 2013, for more details).

Figure 2. A screenshot of a Blackboard Collaborate online session

3.2 The tasks and data collection

Underpinned by interactionist SLA and sociocultural theories, the five collaborative tasks aimed at reinforcing vocabulary and grammar learning and facilitating learners' communicative competence. Five fortnightly 1-hour online sessions were conducted through the Web-conferencing tool Blackboard Collaborate.

Following the task typology proposed by Pica, Kanagy, and Falodun (1993), the five tasks included two jigsaw tasks, two decision-making tasks, and one information-gap task (see Table 3). Figure 2 is a snapshot of the jigsaw task "Describing an Accident".

Table 3. Summary of the tasks

		Task type	Topic
1	Week 2	Information gap	Applying for a Chinese visa
2	Week 4	Decision-making	Buying clothes and sending it to China
3	Week 6	Jigsaw task	Maps and showing directions
4	Week 10	Decision-making	Planning for a trip
5	Week 12	Jigsaw	Describing an accident

In this study, qualitative and quantitative methods were employed to supplementarily reinforce each other, which in turn eliminated the weakness of using a single research method (Creswell & Clark, 2007; Johnson & Onwuegbuzie, 2004; Lister, 2005; Ritchie, 2003). The participants' experiences of using Blackboard Collaborate and tasks were recorded through a researcher's observation, in-depth interviews, and pre- and post-session questionnaires. All five online sessions were recorded using Blackboard Collaborate and Screenflow to capture learners' interaction. Learners' linguistic productions were transcribed for the purpose of discourse analysis (see 4.2). Due to the word limit and the research interest of the current study, this paper focuses only on language learning potential, learner fit, and positive effects.

9

4. Results and discussion

4.1 Practicality

Findings from the interviews indicate that the feature of Blackboard Collaborate was satisfactory to support the completion of collaborative tasks. The audio and video quality during the online sessions received positive feedback from the participants. However, echoing the findings in Wang's (2004) study, Internet bandwidth and PC quality were the major limitations. The installation and use of the software was easy and straightforward.

A comprehensive comparison has been conducted by Author (2013; forthcoming), which identified the pedagogical values of Blackboard Collaborate by comparing it with other popular desktop videoconferencing applications (Flashmeeting, Skype, and Windows Live Messenger).

4.2 Language learning potential

In the current study, language learning potential was examined in regards to focus on form, learners' improvement in Chinese, and collaborative learning as follows:

4.2.1 Focus on form. According to interactionist SLA theories, interactional modification in learners' interaction plays a key role in language acquisition. Since the participants seldom used Web cameras in the online sessions, their oral interaction in breakout rooms was coded and quantitatively analysed according to Varonis and Gass's (1985) model.

Table 4 shows the incidences of negotiation of meaning in the five collaborative online tasks. As is evident, the number of incidences of negotiation of meaning in the second online task outnumbers that of the other four tasks. However, meaning negation in the last two online tasks was relatively low, with only eight incidences in each session.

Table 4. Occasions of interactional modification in the five online tasks

	The 1st task (Information gap)	The 2nd task (Decision-making)	The 3rd task (Jigsaw)	The 4th task (Decision-making)	The 5th task (Jigsaw)
Number of IM	13	23	17	8	8

1) Triggers (T)

According to Varonis and Gass (1985), a trigger is a prime that indicates non-understanding and initiates the modification interaction. It can be a question, an answer, or neither a question nor an answer. Table 5 reveals the incidences of the three types of triggers found in the data collected.

Table 5. Occasions of different types of triggers in the five online tasks

	Trigger as Answer	Trigger as Question	Trigger as Neither Question nor Answer
The 1st task (Information gap)	2	9	1
The 2nd task (Decision-making)	5	11	4
The 3rd task (Jigsaw)	0	0	17
The 4th task (Decision-making)	0	3	0
The 5th task (Jigsaw)	0	0	4

Table 6 offers an example of negotiation routines used during the third online session.

Table 6. Example 1 in the third online session

Negotiation Routines	Transcripts
Trigger (As a question)	St 15: 商场在哪儿？ [Where is the shopping mall?]
Indicator (Visual indicator)	St 12: 先往前走，停，商场在 what is this one? (Pointing on the whiteboard) [Go straight first, stop, the shopping mall is …]
Response (Target language equivalent)	St 15: 医院 [Hospital]
Reaction to response	St 12: Oh 医院，商场在医院的南边。 [The shopping centre is to the south of the hospital]
Indicator (Explicit statement of non-understanding)	St 11: 请再说一遍. [Please say it again.]
Response (Repetition)	St 12： 商场在医院的南边
Indicator (visual indicator)	St 11: 医院？This one? (Pointing on the whiteboard) [Hospital?]
Response (Acknowledge)	St 12: 对！ [Right!]

Triggers as neither question nor answer were the only trigger we found in the jigsaw tasks (the third and fifth online tasks). This was due to the features of the jigsaw task, which requires participants to collaborate to obtain the information allocated to the partners (see Pica, Kanagy, & Falodun, 1993 for more detailed task description). The third and fifth tasks, in particular, required the participants to take turns to describe the routes or the picture they had to their partners. Thus, descriptive statements rather than questions or answers triggered all interactional modification.

11

2) Indicators (I)

Varonis and Gass (1985) categorise four types of indicators, including echo, explicit statement of non-understanding, inappropriate response, and no verbal response. In the current data, there is no occasion of no verbal response. Table 7 shows the occasions of the five types of indicators in the five online tasks.

Table 7. Occasions of different types of indicators in the five online tasks

	The 1st task	The 2nd task	The 3rd task	The 4th task	The 5th task	Sum
Echo	0	0	4	1	2	7
Explicit statement of non-understanding	10	17	11	8	4	40
No verbal response	0	0	0	0	0	0
Inappropriate response	1	0	0	0	0	1
Indicator as a correction	2	6	3	1	0	12

3) Responses (R)

Response, which is the reaction to the breakdown in conversation, is the third prime in Varonis and Gass's (1985) model. Varonis and Gass (1985) identify five types of response, including repetition, expansion, rephrasing, acknowledgement, and reduction. Further, Wang (2008) adds another type of response, namely target language equivalent. This means that an equivalent in Chinese was provided by the partners right after the indicator. All five types of responses were identified in the current data.

Table 8. Occasions of different types of responses in the five online tasks

	The 1st task	The 2nd task	The 3rd task	The 4th task	The 5th task	Sum
Repetition	1	11	4	2	3	21
Expansion	1	1	3	2	0	7
Rephrasing	0	0	0	1	0	1
Acknowledgement	4	2	4	0	4	14
Reduction	0	1	0	0	0	1
Target language equivalent	4	8	6	6	1	25

4) Reaction to Response (RR)

Reaction to response (RR) is considered an optional part of Varonis and Gass's (1985) model. It is the last prime before the interlocutors return to the main conversation flow. In the current data, the majority of reactions to response served two purposes: (1) confirming the closure of the language breakdown (see Example 2 in Table 9) and (2) indicating the modified output has been achieved.

Table 9. Example 2 in the fourth online session

Negotiation Routines	Transcripts
Trigger (as a question)	St 4: ?
	[You need to get your passport done first. Did you bring your photo?]
Indicator (explicit statement of non-understanding)	St 5: 带, no 我有照片 · is that 带 to bring?
	[To bring. No, I have photo.]
Response (acknowledgement)	St 4: Yeah, 带
Reaction to response	St 5: 今天我带照片了。带照片来了。
	[I brought my photo today.]

In Example 2, Student 5 sought Student 4's help to confirm the meaning of '带' [to bring], which was a new word both of them just learned. After Student 4's response, Student 5 successfully produced the modified output.

5) Visual support

In the present study, all four types of primes in Varonis and Gass' (1985) model were identified. Moreover, when scrutinising the current data, video and audio were not the only channels through which the participants could communicate. Other functionalities, such as the whiteboard and text chat, played an essential role in facilitating learners' negotiation of meaning in the task completion process (see Example 3, Table 10). The participants' actions, such as using the whiteboard and typing in the text chat, appear in brackets in the transcriptions.

Table 10. Example 3 in the third online session

Negotiation Routines	Transcripts
Trigger (as a question)	St 15: 商场在哪儿？
	[Where is the shopping mall?]
Indicator (visual indicator)	St 12: 先往前走 · 停 · 商场在 what is this one? (pointing on the whiteboard)
	[Go straight first, stop, the shopping mall is …]
Response (target language equivalent)	St 15: 医院
	[Hospital]
Reaction to response	St 12: Oh 医院 · 商场在医院的南边。
	[The shopping centre is to the south of the hospital]
Indicator (explicit statement of non-understanding)	St 11: 请再说一遍.
	[Please say it again.]
Response (repetition)	St 12: 商场在医院的南边
Indicator (visual indicator)	St 11: 医院？ This one? (pointing on the whiteboard)
	[Hospital?]
Response (acknowledge)	St 12: 对！
	[Right!]

13

In Example 4, Students 11, 12, and 15 were working on the map shown on the whiteboard (see Figure 3). Student 12 could not recognise the name marked on a building, so she used the pointer on the whiteboard to indicate it to her partner. With Student 15's assistance, she understood, and she used the pointer when showing the direction to Student 11. Student 11 also used the pointer to confirm the word '医院' [hospital] in the subsequent conversation.

Figure 3. A screenshot of the whiteboard in the third task

Similarly, in Example 4, Students 9 and 3 were carrying out the 'showing direction' task. Student 9 used a new expression, '过一条街' [crossing the street] that the students had not learned in the class before. After he mentioned it twice in the conversation, student 3 tried to learn it by asking Student 9 to write it down for him. First Student 9 put it in the text chat, but for some reason Student 3 could not see it. Then Student 9 decided to write it directly on the whiteboard. There are more examples in the data of participants' written communication first occurring via text chat. If there were more than two participants in a group, they would put texts on the whiteboard.

Example 4. The third online session (Showing Directions task)

St 9: 你往左拐，再过一条街，crossing the street. [You turn left. Then cross the street.]
St 3: Oh, this is how you say 'crossing the street', 过一条街。[Cross a street.]
St 9: 好、你想去图书馆吗？你往左拐，走过一条街 (incorrect pronunciation)，停，书店在你的左边。 [Ok, do you want to go to the library? You turn left, cross the street. The bookstore is on your left.]
St 3: How do you say 'cross the street'?
St 9: I put in the text chat, hold on! (typing in text chat)
St 3: Sweet. Could you type 'cross the road'?
St 9: Yeah, it's in the text chat. 走过一条街。[Cross a street.]

St 3: I don't see it in the text chat.
St 9: Really? I can write it down. (typing on the whiteboard)

In the follow-up questionnaires, the participants were asked to write down expressions, grammar structures, and vocabulary they remembered from the online sessions. The answers primarily focused on grammar structures, vocabulary, and certain expressions intensively used in all the online sessions, such as '请再说一遍' [Please say it again], '(English words) 中文怎么说?' [How do you say … in Chinese?], and '停，走错了！' [Stop, you took the wrong way!].

4.2.2 Improvement in Chinese. Following the study, participants' perceptions of language improvement were collected via post-session surveys, in-depth interviews, and the researcher's observations.

The instructor's observations

Throughout the five online sessions, it was noted that due to lack of conversation practice in the face-to-face class, the students' listening and speaking proficiency was relatively low. In the first two online sessions, the majority of them were barely able to read and write if the questions in the textbook were provided. Thus, it was difficult for them to produce their own sentences in a dialogue. Therefore, the conversational-style tasks were designed to serve the purpose of facilitating their spontaneous reply and communicative competence.

Furthermore, their inappropriate pronunciation was another main cause that led to communication breakdowns. In the conversations, an overwhelming number of language problems were caused by incorrect pronunciation. Most of the time, the solutions to these kinds of breakdowns relied on the peers' or the tutor's assistance in providing written or verbal pronunciation correction via audio, text chat, or the interactive whiteboard, which may draw the participants' attention to the form of the target language. For example, Student 9 was enthusiastic about participating in this project in the first three online sessions. He was always the first student to log into the online sessions, and he consulted the textbook and his notebook when he encountered non-understanding. However, incorrect pronunciation and relatively low listening ability affected the collaboration between him and his partners. Thanks to his partners' help and his own efforts, a noticeable improvement in terms of pronunciation and communication competence was observed in the last two online sessions. Not only can he interact with other students more smoothly, but he also became more confident using the target language. The excerpt of his interview can be seen in the section that follows.

Learners' perceptions of improvement in the target language

In the post-session surveys, the participants rated the aspects of Chinese they believed improved in the five online sessions. As can be seen in Figure 4, the number of entries for 'pronunciation', 'listening ability', 'speaking ability', 'grammar', and 'conversation tactics' were voted for most often (10/16), followed by 'spontaneous replies' (9/16).
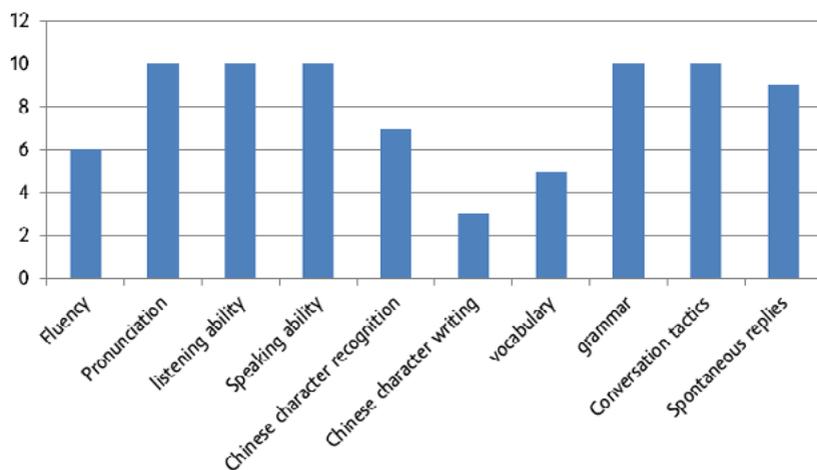
Figure 4. The aspects of the target language improvement in the follow-up survey

Data collected from the in-depth interviews after the five online sessions shows that the participants all perceived that their language had improved in terms of fluency, listening and speaking skills, and communication and comprehension competence.

Student 9 commented:

> I think the fluency has been improved for certain. And also I'm being able to apply the grammar structures in practice. That's just a big thing for me… If you asked me that question six moths ago, I probably would have said no, but now that I have really successful sort of progression with it… I feel more confident when I was responding as well.

It needs to be pointed out that a number of participants appreciated their improvement regarding Chinese character recognition, a factor neglected in previous studies. Throughout the online sessions, there were more opportunities for them to be exposed to Chinese characters, which fostered their Chinese reading and writing proficiency.

4.2.3 Collaborative learning. The aim of this study was to examine the effects of the Web-conferencing environment and collaborative tasks on facilitating learners' second language acquisition and communicative competence. Therefore, one of the major concerns in this study was whether collaboration occurred in peer–to-peer interaction in the task completion activities. A great number of examples in the data collected show that collaborative learning took place in pair or group work in the current study (see Example 5).

Example 5. The third online session

St 5: 你往下边走。   [You go down.]
St 6: 下边？   [Down?]
St 5: 下   [Down.]
16 St 6: You mean down?

St 5: Yeah, like back, down.
St 6: It's like 左，前 and like…   [Left, front.]
St 5: Like 你往下边走   [You go down.]
St 6: You can say like 你往南走   [You go south.]
St 5: Oh, ok, 你往南走，往左拐， 教室在公园对面。
     [Ok, you go south, and then turn left. The classroom is opposite the park.]
St 6: 教室. (typed on the whiteboard)   [Classroom]

In Example 5, Students 5 and 6 were working on the third task – showing directions on a campus map. Student 5 kept saying '往下边走' [go down], which can be understood on the map but is not appropriate in a face-to-face conversation. Although Student 6 could understand the direction instruction, he still provided the correct form of expression to Student 5. This type of negotiation was not triggered by non-understanding or by an unknown lexical or syntactic item. However, throughout the collaboration, both the students' attention was drawn to language form, which may be conducive to their language learning.

According to the participants' answers in the post-session survey, they believed that peer collaboration, which resembled class, provided them with more opportunities for feedback and explanations. Working with other students helped to create a less pressured and more engaging environment in which they felt less distraction and were more willing to contribute to the group.

In the survey, the participants were asked to compare one-to-one and many-to-many study. One participant believed that both one-to-one and group study is useful in different ways:

One-to-one would be helpful when a student is falling behind and requires tuition to catch up. The many-to-many was very useful for a general classroom environment where everyone was more or less up to date, with no one needing more help than anyone else. I personally preferred the many-to-many format, as the classroom setting assisted in my motivation to learn and willingness to participate.

4.3 Learner fit

In this study, learner fit concerns two major aspects: (1) the fit between the level of the difficulty of the tasks and the level of proficiency of the learners and (2) the fit between the number of opportunities for engagement or interaction with learners' expectations.

4.3.1 Participants' Chinese proficiency before attending the online sessions. All the participants were on-campus students who had finished one semester of Chinese language study. Their Chinese language proficiency varied in terms of listening, speaking, reading, and writing. However, due to a lack of conversation practice in class, the majority of them were weak in spontaneous communication. Spoken responses in class rely heavily on the written materials in the textbook rather than the utterances produced by the students themselves. For example, Students 1 and 2's language proficiency was comparatively higher than that of other students in terms of reading, writing, and grammar, but they were still struggling to use Chinese to express themselves before attending the online sessions. Students 9 and 10, who were less proficient, were not confident in participating in this study at the beginning.

17

4.3.2 Participants' perceptions of level of difficulty of the tasks. According to the data collected from the follow-up surveys and the in-depth interviews, the participants' perceptions of task difficulty varied depending on their Chinese proficiency, their familiarity with the topic, and task instructions.

In the interviews, the participants' perceptions of the level of difficulty were diverse, but all of them confirmed that the tasks were challenging yet still within their grasp. Some students noted that they initially needed to spend a short time (around two minutes) to work out what they needed to do in the tasks. For example, Student 5 said, 'I like the third and fifth online sessions; [they] were straightforward and we know what to do. Not much thought in deciding things'. However, all of them admitted the tasks were challenging in a positive way. Student 1, whose Chinese proficiency was comparatively higher than that of other students, commented in the interview,

> The last one was definitely challenging. But it's good to show the unknown things. The fourth one was manageable but starting to go difficult. The first three ones were very understandable and easy to go. (Was any one too hard to do?) No. I think it's appropriate, absolutely.

4.3.3 Participants' perceptions of engagement in the tasks. The follow-up surveys and the in-depth interviews showed that the participants enjoyed the last three sessions more, as their language proficiency had gradually improved and they were more accustomed to the environment. Student 10 commented in the interview, "I was particularly engaged talking in the last few sessions because I was more used to it. (How about the first [few]?) It was just because of my language'. Student 9 mentioned that he engaged with the jigsaw tasks because 'naturally you do one step, then the other person does the other step, then you swap. That was very good.'

Moreover, in the post-task stage, all the groups were required to present their work in the breakout rooms, which made them pay more attention to the task processes. Student 12 commented in the interview that 'even [when] my task is finished and my presentation is finished in the online session, you still get to listen to other people's presentation and you learn from them. So it's useful in every way'. Student 2 thought the teacher's questions after the presentation encouraged her and the partners to concentrate more on the tasks, 'because we don't know when you're going to ask us questions. I always have to be listening'.

4.4 Positive effects

In the current study, the positive effects encompass any effects of the tasks and the Web-conferencing environment on the participants except language learning potential. According to the data collected, two aspects are addressed in terms of the positive effects: (1) the effects of the multimodal environment and (2) the effect on learners' confidence building.

4.4.1 The influence of the multimodal environment. In the follow-up surveys and the in-depth interviews at the end of this study, students were invited to share their learning experience, particularly their feelings regarding the multimodal environment. The majority of them mentioned that in the beginning it was quite overwhelming because of the software, the audio connection, and the tasks, especially for the novices. However, after they

became accustomed to the interface and the structure of the online sessions, they became more active and willing to participate in online discussions. They felt they were better able to manage the multitasking interface and enjoy the interaction with peers online. Student 9 said in the interview,

> It's just like you invest some time before and then really focus. I mean like the first time dealing with sound, it took me like three lessons before I worked out you have to click the things to talk. I am ? really relieved it works now. I feel more confident when I was responding as well. When you asked me questions, I feel like I can click the thing and jump in and I know what's going on, it's good.

Although not all the students appreciated the use of video, in the interviews all of them felt positive about being able to see the teacher on the video. The benefits included (1) contributing to creating a sense of a classroom study environment, (2) relieving the pressure in an online class, and (3) helping the students feel more engaged in the online tasks. Student 12 reported in the interview that

> If X laoshi (teacher X) uses the webcam, you will be more like not just talking to technology, a machine, but more like talk to a person. So I feel more confident in speaking with X laoshi.

4.4.2 The effect on learners' confidence building. The data collected has shown a number of positive effects on the participants in terms of confidence building. These include that (1) it created a less pressured environment to learn and practice the target language, (2) learners felt more confident to use the target language, (3) learners felt more confident to use technology to study a foreign language, and (4) the positive feedback and encouragement received from peers and the teacher made them feel more confident.

5. Conclusions

This study adopted and adapted Chapelle's (2001) criteria for evaluating the appropriateness of Web-conference-based collaborative tasks, and it provides empirical evidence of the implementation of the criteria through participants' perceptions. The findings, which are context specific, confirm that the technical capacity of the Web-conferencing tool Blackboard Collaborate is reliable and sufficient for supporting teacher–learners' multimodal interaction in the online environment. The designed collaborative tasks have shown great pedagogical value in facilitating learners' SLA in an online environment.

Regarding the evaluation criteria proposed in the current study, the main findings can be summarised as follows: First, as far as language learning potential is concerned, the results confirm that the tasks created opportunities to focus learners' attention to the forms of the target language. Moreover, the participants perceived their language as improved in terms of listening, speaking, and communicative competence. Incidences of collaborative learning were identified in the peer-to-peer interaction. Secondly, the participants believed the level of difficulty of the tasks and their language proficiency level were a good fit. They felt engaged in the tasks with peers in breakout rooms. Finally, the participants found that they were better able to multitask in the multimodal environment to communicate with others. They were encouraged by the positive feedback from their peers and the teacher, and it contributed to boosting their confidence in language learning.

The researchers are aware of the limitations of the study. The findings and arguments were based on data collected from a small cohort. Moreover, some of the data collected is limited, for example, learners' improvement in Chinese is based on the students' own perceptions of their learning rather than objective measures. In addition, all the participants were on-campus students. The results for distance learners might be different.

6. Acknowledgements

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21

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