Challenges in a mobile English telecollaborative project: Towards a conceptual model

Junjie Gavin Wu
Shenzhen Technology University, Shenzhen, China

Mark Feng Teng
Centre for Linguistic Sciences, Beijing Normal University, Zhuhai, China

Lindsay Miller
City University of Hong Kong, Hong Kong SAR, China

This paper, drawing upon a mobile telecollaborative project, resonates with the rapid development of technology in language learning. We employed the instant messaging app WeChat to create an English telecollaborative environment for two groups of Chinese students to communicate within. Interview data were triangulated with students' chat transcripts and comments from a teacher's reflective journal. A mixed-methods approach, including quantitative descriptive analysis, thematic analysis and content analysis, was used to investigate the challenges and the linguistic performance by applying the community of inquiry framework to the students' chats. The analysis illustrates some of the complexities and challenges of using online apps as a way of communicating in a second language: students expected more teacher support, they struggled to use the app due to their physical environments and they felt that they were not sufficiently well prepared for chatting in an English medium environment. Based on the findings, a conceptual model is proposed for consideration when encouraging students to engage in telecollaborative learning.

Implications for practice or policy:

- Teachers should enhance their visibility in mobile telecollaborative projects by promoting participants' contribution through different facilitation techniques.
- Teachers and educators can capitalise on the proposed conceptual model to guide their own design of such online learning experiences for their learners.
- Telecollaborative learning can be improved by taking into account various factors such as physical environment, the medium of communication and the potential incentives.

Keywords: telecollaborative learning, language learning, community of inquiry, autonomy, instant messaging

Introduction

Owing to the pervasiveness of new technologies, learning has been extended beyond the traditional physical classrooms and geographic boundaries. Telecollaboration is a form of network-based language teaching that engages learners in interaction and collaboration with their partners in distant locations under the teachers' guidance (O'Dowd, 2016). The characteristics of telecollaboration include intercultural dialogue, interactive and negotiated knowledge sharing and understanding and student-centred learning. With the ongoing progress in information and communication technology in recent years, telecollaboration has received attention from educators for its potential in supporting foreign language learning. The emerging research trends for telecollaboration are a call to respond to today's networked and globalised world, especially within the higher educational contexts, with a focus on internationalisation. The increasingly advanced technologies make telecollaborative communication easier for crossing cultural, national and regional divides. Along with researchers' and teachers' emphasis on using telecollaboration as an option for learners come the challenges of moving students away from their comfort zone of classroom learning.

To provide authentic, meaningful and engaging cultural and language learning experiences for learners nowadays, who are to a large extent characterised as *digital residents* (see a discussion of the term in Hockly, 2011), educators have turned their attention to a pedagogy which includes elements of telecollaboration either between students themselves or between the teachers and their students. The various

benefits of using telecollaboration tools have been extensively documented and include the facilitation of learner autonomy (Flowers et al., 2019), linguistic proficiency (Wu & Miller, 2021), intercultural communicative competence (Munezane, 2020) and digital literacies (Yang, 2020). To maximise the positive effects of telecollaboration, different variables must be considered: individual differences of the participants, sociocultural norms, technology acceptance and the learning task design, to name just a few, each of which may lead to failed communication.

Describing a telecollaborative project between American and Spanish students, O'Dowd and Ritter (2006) argued that some of the complexities and challenges for organising such work include issues at the individual, classroom and sociocultural levels. However, the recent literature in this area overwhelmingly reports success when using telecollaboration with university students with little reporting on the potential negative sides or even when it fails. Lin and Warschauer (2015) have observed that "as with any area of technology-based learning, a file drawer problem may be in effect, with those studies finding no benefits for online learning less likely to be published" (p. 395). In addition, studies in revealing the complexities and challenges in telecollaboration are scarce. Most of the reported studies on telecollaboration seem to run smoothly and produce positive results. This ostensibly flourishing phenomena should be treated with caution as organising any new pedagogical approach requires expert knowledge and experience in language, technology and, above all, the awareness of the unique local ecology of learning (van Lier, 2004). As Chun (2015) remarked, the use of technology in language learning does not constitute a language pedagogy and "simply connecting learners with each other online does not ensure a successful intercultural exchange" (p. 17). Mobile technology is believed to hold the potential for promoting student learning because of its affordances for providing authentic, collaborative and context-aware learning experience (Traxler & Kukulska-Hulme, 2016). However, we believe that the complexities of mobile technology have not yet been explored extensively enough within the telecollaboration research agenda.

O'Dowd (2016) and Rienties et al. (2020) proposed that telecollaborative learning should move towards the use of English as a Lingua Franca between groups of learners, particularly when the current workplace is becoming globalised. Yet, they pointed out that research into this has not been widely reported and more studies are clearly needed to explore such possibilities.

To these ends, the present study set out to explore a cross-strait telecollaborative project between Mainland China and Taiwan. With the latest development and pervasiveness of smartphones, an instant messaging app WeChat was employed to create an English medium telecollaborative environment for the participants. Apart from the often-used research method of semi-structured interviews, the study triangulated data sources with chat transcripts and a teacher's reflective comments from an action research journal. It is hoped that, through the analyses of subjective-nature (interviews) and objective-nature (chat transcripts) data, this paper contributes to a more in-depth understanding of the complexities and challenges in designing telecollaboration communities by answering two research questions:

(1) What were the challenges encountered by the Mainland Chinese participants in their online discussions?
(2) How did the participants perform in their online discussions?

Community of inquiry (CoI)

Telecollaboration studies have already explored students' and teachers' perceptions of the uses of this pedagogical approach; yet, few studies have investigated the actual discoursal performance of the exchanges, partly because there are insufficient analytic frameworks which can be referred to. One major theoretical framework which can be of use is the community of inquiry (CoI), which is used to conceptualise how learning in online communities can be supported through the interactions among the three presences – cognitive presence (CP), social presence (SP) and teaching presence (TP) (Garrison et al., 2001). CoI reflects a collaborative-constructivist perspective that learners need to work collaboratively to construct meaning in online learning communities, which are conducive to reflective and in-depth learning (Garrison, 2017).

CP is defined as "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse" (Garrison & Arbaugh, 2007, p. 161). Studies have found that CP is difficult to develop in online communication as learners often encounter trouble moving beyond the first two levels of

CP (Tang & Hew, 2019). To facilitate and sustain students' online discussion in more advanced thinking levels, researchers such as Garrison (2017) believe that TP plays a crucial role, including instructional design and organisation, facilitating discourse and direct instruction.

TP is never exclusively limited to instructors and may be taken up by students also, although teachers may take on more responsibilities of organising and facilitating online exchange. Researchers such as Hafner and Miller (2019) have argued that learners should be encouraged and empowered to take charge of their own learning. In TP, there is also a need for learners to further facilitate their peers' participation in order to create an interactive and constructive discoursal community. Meanwhile, the teacher's presence is controversial in many online learning projects. In previous studies (Wu, 2017, 2018), Mainland Chinese university participants welcomed their instructor's participation in a telecollaborative group. They believed that the teacher had prompted the exchange from different aspects and they had developed more trust with the instructor compared with the traditional interactions in physical classrooms. This, though, might not always be the case (Wang et al., 2016).

As one important element in promoting online exchange, SP in the CoI framework should also be taken into account. SP emphasises the emotional belonging and social interactions in online learning groups and reflects the extent to which the group members are able to communicate affectively, interactively and cohesively. Garrison and Arbaugh (2007) maintained that the development of SP can be beneficial to that of CP because of the increased trusting atmosphere and the increased learners' satisfaction; however, it depends on the nature of the tasks (e.g., group work vs text memorisation). SP may also be seen as a way to lead students to become more autonomous learners as they rely less on the teacher and more on their chat group for support.

Due to the complexities of setting up a telecollaborative learning environment, there are many challenges to overcome. However, exploring these challenges from the perspective of CoI has not yet received much attention. According to Garrison and Arbaugh (2007) and Wang et al. (2016), the majority of the previous studies have mainly looked into only one particular CoI presence. Few studies have investigated the three presences (CP, SP and TP). To fill in this gap, the current study aimed to explore the challenges in a telecollaborative group through the full lens of CoI.

Research design

Participants

Twelve university students with ethical clearance participated in this mobile community. Altogether, in the project, there were six Mainland Chinese students, six Taiwanese students, one Taiwanese teacher and one Mainland Chinese teacher, who was also one of the researchers of this paper. The Taiwanese teacher is a lecturer in a private Taiwanese university who has been teaching English courses and researching computer-assisted language learning for about 10 years. The Mainland Chinese teacher taught university Business English students for about 5 years and has an ongoing interest in exploring the use of technology for language learning purposes.

All the student participants were enrolled in undergraduate-level English programs except one Logistics Management student from Taiwan. The Mainland Chinese students were first-year Business English majors with about 10 years' experience of learning English, and they all voluntarily took part in the project after a briefing about the potential benefits of extending their learning beyond the classroom. We present the general descriptive data from all participants in the study, but because of space limitation, we focus only on the interviews and text data from the Mainland Chinese participants. Table 1 shows a brief profile of each Mainland Chinese participant.

Table 1
Biodata about the Mainland Chinese student participants (pseudonyms used)

Participant	Gender	Language used at home	Major	No. of years of learning English
Annabel	Female	Chinese dialects	Business English (Year 1)	13
Bree	Female	Chinese dialects	Business English (Year 1)	14
Candice	Female	Chinese dialects	Business English (Year 1)	12
Denise	Female	Chinese dialects	Business English (Year 1)	14
Elisabeth	Female	Chinese Mandarin	Business English (Year 1)	14
Felicia	Female	Chinese Mandarin	Business English (Year 1)	15

Project design

The cross-strait telecollaborative project lasted 8 weeks. The central goal of the project was to increase students' use of English language and provide an environment for intercultural communication between the Mainland Chinese and Taiwanese students drawing on the affordances of mobile technology.

Differing from the traditional practice of pairing students into dyads, the 14 participants (students + teachers) in this project formed one WeChat group to co-construct and negotiate meaning via group interactions. The decision was jointly made by the two teachers as the Mainland Chinese and the Taiwanese students did not, initially, know each other and so may have been reticent about having pair chats with total strangers. In addition, Asian students tend to keep silent in unfamiliar environments and lack the awareness of self-autonomous learning (Miller & Wu, 2021; Xu & Carless, 2017). Thus, all the participants were organised into one large group as we hoped that this would lead to more self-initiated discussions between various students, with an option to chat, monitor or do both.

WeChat, similar but with more functions than WhatsApp, has a large customer base in the Chinese-speaking community (Wu & Miller, 2021). WeChat was chosen as the site of communication in this study for three reasons. First, the app was available and used in both Mainland China and Taiwan. Second, the multimodal features of WeChat were deemed constructive for communication purposes. WeChat has the affordance of providing a multimodal communication environment, including texts, videos, emojis, memes, hyperlinks and pictures. Third, WeChat has a user-friendly interface and the various functions are not difficult to learn or to use.

In this project, students were encouraged to use English to communicate their ideas about any topics based on their interest. The Taiwanese and the Mainland Chinese teachers decided not to prescribe any discussion topics for the participants over the 8 weeks due to the following reasons:

(a) All of the students faced a heavy learning workload from their daytime courses and so the teachers did not want to burden them with what might be perceived as an onerous night-time project.
(b) Students' voluntary participation denoted their interests and willingness to contribute to and participate in the exchange, and so we thought that they may self-initiate their chats.
(c) Due to the non-credit nature of the project, the teachers did not consider it possible to ask the students to finish structured tasks.
(d) Although social chatting with mobile technology might be common among the students, being in an English mobile discussion group with their teachers' presence might have been a new experience, and we did not want to make the event more stressful for the participants (Wu, 2017).

The absence of discussion topics is a pedagogical decision made by the teachers, but the teachers explained the pedagogical goals at the beginning. We considered that changes to the students' learning ecology may result in resistance and complaints from the students, and so the teachers took small steps in this stage to avoid strong affective reactions. To conclude, we followed Littlewood's (2014) suggestion that necessary localisation of the tasks must be considered with micro-level student needs and macro-level school learning culture and so we thought that student-initiated discussions would be more appropriate.

Data collection and analysis

Data were collected during 2018 and 2019. To answer Research question 1, post-project semi-structured individual interviews were conducted with the Mainland Chinese participants near the end of the learning project. The interview served as a starting point for the current study to question the seemingly over-optimistic research domain. The interview protocol was guided by Hafner and Miller's (2011) questions and focused mainly on the participants' perceptions of their culture and language learning experience in this mobile community and the improvements of project design. Three broad open-ended questions were asked in the interviews:

(a) To what extent did you find the project help you learn about Taiwanese culture?
(b) To what extent did it help you practise your English expressions of Chinese culture?
(c) Do you have any suggestions for the improvement of the project design?

To give the interviewees sufficient time to consider the questions and to reinforce the usefulness of the app, WeChat was employed as the venue of each interview. Besides that, another benefit of using WeChat in interviews was the easy storage of responses. Each interview session lasted around 15 minutes and the students were prompted by the teacher to go beyond a simple answer and expand their views. The interviews were conducted in Chinese by the first author and then translated into English. Interviewees were invited to double-check the translation to ensure reliability of responses. The interview data were then analysed according to Strauss and Corbin's (1998) coding procedures of open, axial and selected coding.

In contrast to other studies in telecollaboration that have relied mainly on interview data, the current study triangulated the participants' performance with their 8-week chat transcripts to answer Research question 2. Moreover, the transcripts were analysed from three different perspectives (Table 2). The procedures consisted of the following:

- A quantitative descriptive analysis was conducted, with the aid of Excel software, to provide a snapshot of the participation throughout the entire eight weeks. In total, 2,690 messages from the 8 weeks were calculated. Results are shown in Figure 1.
- For Week 1, the participants exchanged 1,299 messages, accounting for around 50% of the total messages. A thematic analysis was carried out to explore the discussion topics based on Braun and Clarke's (2006) steps of conducting thematic analysis. Although it is common to have more than one thread of topic in online discussions, the study coded each thematic unit with one main topic. The purpose here was to uncover the general discussion interests in the most productive week. The preliminary results from the initial round of coding were checked by the second and third authors. To enhance the trustworthiness of the analysis, the first author re-coded the data set again after 6 months. In the second reading, no new analytical codes were produced, but some minor changes were made with an intra-coder reliability of 98.85%.
- For Weeks 6 to 8, the number of participants' messages decreased drastically. Thus, a content analysis was applied with the hope of finding out the underlying factors for the limited participation. The CoI framework was used in order to analyse the chat messages. Each message was coded for its main communicative purpose with an indicator from the CoI framework. Before coding, we familiarised ourselves with the literature on CoI. Indicators of the three presences were kept in mind with examples provided by previous researchers. Though some messages may have multiple purposes, here we focus only on the most important one. The first author analysed the 170 messages and a second-round check was conducted 6 months later. Compared with the first round of coding, the second time reached an intra-rater reliability over 97.6%. Similar practice of inviting the other two authors to review and comment on the analysis was conducted to improve the coding reliability.

Table 2
Data sources and analysis in the study

Research questions	Data sources	Data analysis
RQ1. What were the challenges encountered by the Mainland Chinese participants in their online discussions?	Student interviews	Thematic analysis
RQ2. How did the participants perform in their online discussions?	WeChat chat transcripts	8 weeks: Quantitative descriptive analysis Week 1: Thematic analysis Weeks 6–8: Content analysis

Findings

RQ1: What were the challenges encountered by the Mainland Chinese participants in their online discussions?

In order to answer Research question 1, a thematic analysis was applied to the students' interview data. Two main challenges were identified: the insufficient use of the multimodal feature of WeChat and the lack of guiding topics in discussion.

Insufficient use of the multimodal feature of WeChat
The interviewees mentioned that although there were diverse modes for communication with WeChat they did not fully utilise them. Annabel suggested students could combine text and voice messages, along with picture sharing. Bree and Elisabeth argued for the inclusion of video messages to make the discussion more "alive and vivid". Denise recommended the use of text and voice messages similar to Annabel. Felicia suggested that if they used voice messages, then they might develop more courage to speak in English and that it might facilitate their friendship with peers more. However, the interviewees also mentioned their reasons for not using the voice function: sometimes they were prevented from doing so when in the library or in their dormitories, as there were always other people around and they did not want to disturb others. Some participants may be shy to talk in English. The two teachers were hesitant to ask their students to use different modes in their discussions as the literature suggests that multimodal environments might cause cognitive challenges and thus negative feelings from the students as not all the students can be categorised as digitally competent (Hockly, 2011). However, the interviews indicated that the interviewees had higher expectations for themselves and if different modes of communication had been used then this would have had positive social-affective impacts on the students' participation.

> I think we can send some short video clips next time. The discussion will become **more alive and vivid**. (Interview, Bree, emphasis added)

Lack of guiding topics in discussion
Annabel, Candice and Elisabeth suggested that there should be different discussion themes for each week as they sometimes felt lost without any guiding topics for their chats:

> And there will be one topic each week for discussion. For example, we can introduce the most attractive tourist spot by using text and audio messages as well as pictures. By doing so, we will have more constructive discussion. (Interview, Annabel)

Candice proposed integrating the informal online discussion with their course content. She commented that she would like to have more opportunities to review what she had learnt in her courses. By transforming classroom input to output, she believed that she could master knowledge in a more efficient fashion. For Elisabeth, social themes intrigued her as she remarked that hearing different voices reading the latest local and global news was appealing to her.

The lack of a clear pedagogical structure appears to have been a major obstacle for the students; we will return to this point with results from the CoI analysis in the Results of Weeks 6-8 content analysis section.

RQ2: How did the participants perform in their online discussions?

To answer Research question 2, the chat transcripts from the discussion group were analysed quantitatively and qualitatively. First, the general participatory performance was calculated and presented. Based on the initial findings, a thematic analysis was applied to the first-week chat messages to uncover the discussion topics in that fruitful week. Drawing upon the CoI framework, a content analysis was also conducted with the messages from Weeks 6 to 8 to understand the undesirable performance of the group.

Weekly participation throughout the 8 weeks

During Week 8, a total of 2,690 messages were exchanged by the 14 participants (12 students and 2 teachers), based on the quantitative descriptive analysis. It might sound as if all the participants were actively engaged in the discussion; however, an uneven distribution of the chat messages was discovered (Figure 1). Unfortunately, the number of messages dropped sharply after week 1 and continued to decrease for the rest of the project. In the final 3 weeks, participants' contribution declined again. In order to investigate this negative phenomenon, a thematic analysis was conducted on the data to find out which topics the students discussed (especially in the first week), and then a content analysis was employed to explore the potential reasons for the limited participation in future weeks.

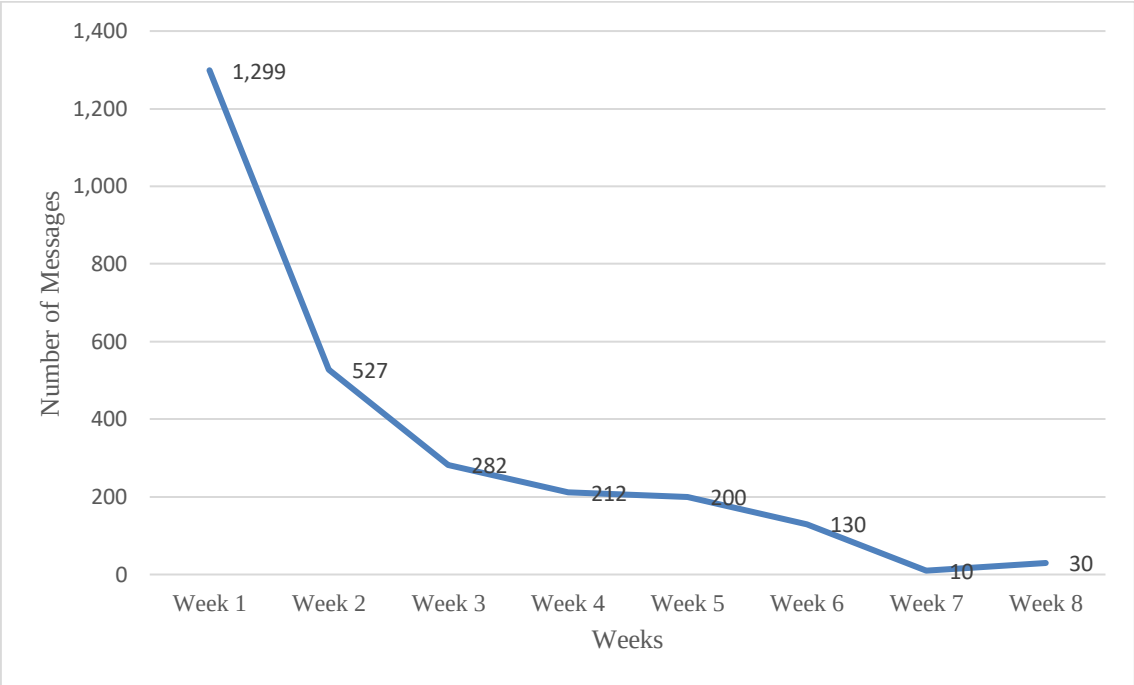

Figure 1. Number of messages sent by 14 participants

As the interview participants mentioned, an insufficient use of multiple modes of WeChat, the study categorised the messages into 6 types (Figure 2) according to their modes of communication. It should be pointed out that texts with emojis were labeled as texts for the reason that emojis usually serve as a support for text messages (Skovholt et al., 2014). Figure 2 show that, among the 6 types of messages, texts, emojis, stickers and memes account for over 90% of the 2,690 messages. The descriptive results support the interviewees' observation, as modes such as video and voice messages were rarely used. However, Garrison (2016) argued that text-based communication, though it is the most common mode of communication, has the unique advantage of supporting more reflective thinking as texts visualise thoughts and provide time for composition, re-reading and revision.

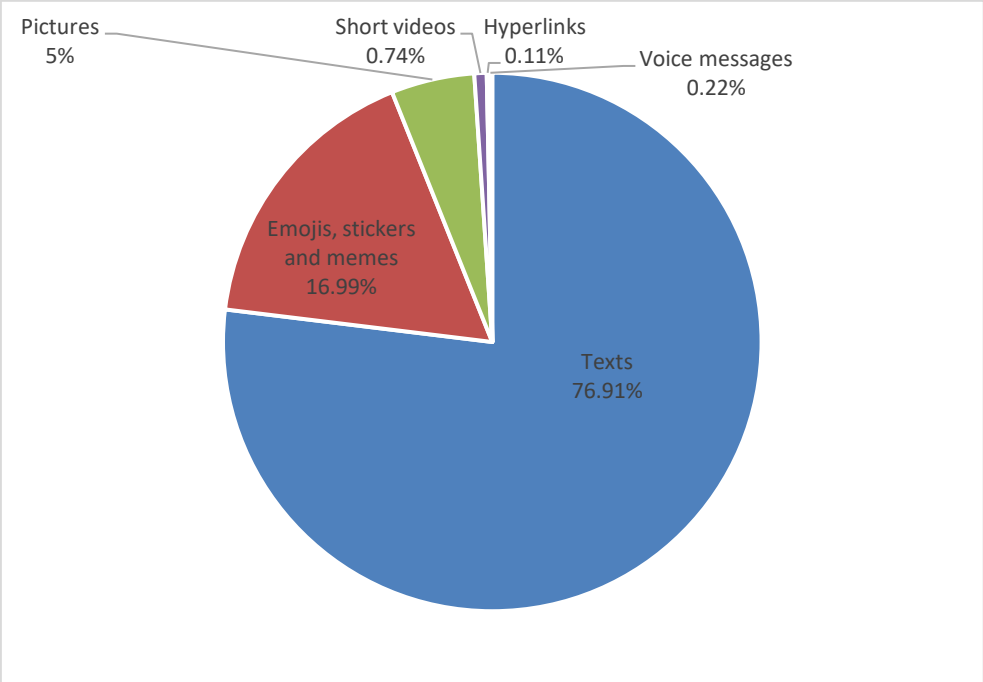

Figure 2. Six types of messages sent by 14 participants

Each Mainland Chinese participant's WeChat contributions were calculated (Figure 3). We see a striking difference with Candice and Denise being much more active than the other students. One big obstacle the Mainland Chinese teacher noticed was the fact that in the group there were some active participants who dominated the discussion, which may have resulted in others choosing to monitor only the chats. It seems that not all participants wanted to voice their opinions, and this created inequalities in the community. Another issue mentioned in the interviews was the fact that some students focused too much on the accuracy of their messages and thus missed their chances to engage in more spontaneous interaction. This led to missed opportunities to engage with the ongoing chat.

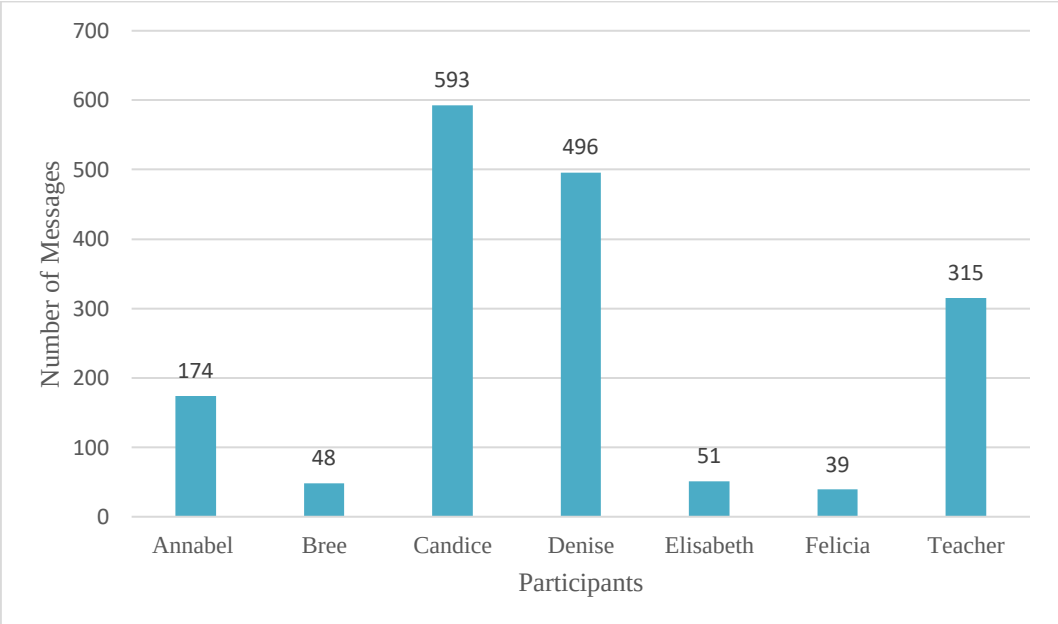

Figure 3. Number of messages sent by the Mainland Chinese participants

Results of Week 1 thematic analysis

Week 1 started on a Thursday, and the students were active at the beginning of the week and sent around half of the total messages from Thursday to Sunday. A thematic analysis was applied to the first week's messages to uncover the discussion topics; six broad topics emerged from the analysis (Figure 4). Topics included personal lives (N = 516, 39.7%), self-introduction (N = 410, 31.6%), school matters (N = 227, 17.5%) and apologies (N = 95, 7.3%). In the right-hand column of Figure 4, sample chat messages can be seen. It should be noted that except for the anonymised names of a Taiwanese student and the teacher in Hometown and Food, no other modifications have been made. Linguistic mistakes, typos, capitalisation and Chinese words are presented in their original forms.

As discussed in the previous section, the lack of discussion topics was perceived by the Mainland Chinese students as a major obstacle of their active participation. The thematic analysis of Week 1 provides some evidence that there were several spontaneous discussion topics: hobbies, favourite foods and films. These topics are similar to those discussed in language classrooms at the beginning of a semester and so it may not be surprising to see that students were mimicking their in-class topic expectations. As can be seen from Figure 4, there is a wide range of discussion topics, which may also indicate that there might not be much in-depth discussion within such a short period of time in the first week (Thursday to Sunday). For example, Extract 1 in Table 3 presents a dialogue of the participants discussing the weather in their hometowns. John, the Mainland Chinese teacher, initiated the discussion by sharing a photo he took by drawing on the "anywhere" affordance of his smartphone. Following his emoji of snow, Candice and Felicia responded to his messages by posing questions to John. They further reflected on the weather and temperature in their own hometowns. Moreover, Candice shared a news link to the group members. Apart from these two active students, the Taiwanese teacher and Annabel also joined the chat by voicing their emotional response to John's photo. Yet, they did not contribute actively to the development of the talk. An issue to be mentioned is that no Taiwanese students participated in this short dialogue. Without getting any responses from their counterparts, the Mainland Chinese students may have felt overlooked and de-motivated to continue the discussion.

Overall, the current findings suggest that although students were engaged in different topics in the first week, the discussion may be limited to a superficial level and more in keeping with their expectations of what their English teachers encouraged them to talk about in class. More instructional attention needs to be given to this first week of interaction to encourage active discussion and to further promote the discussion into a deeper level.

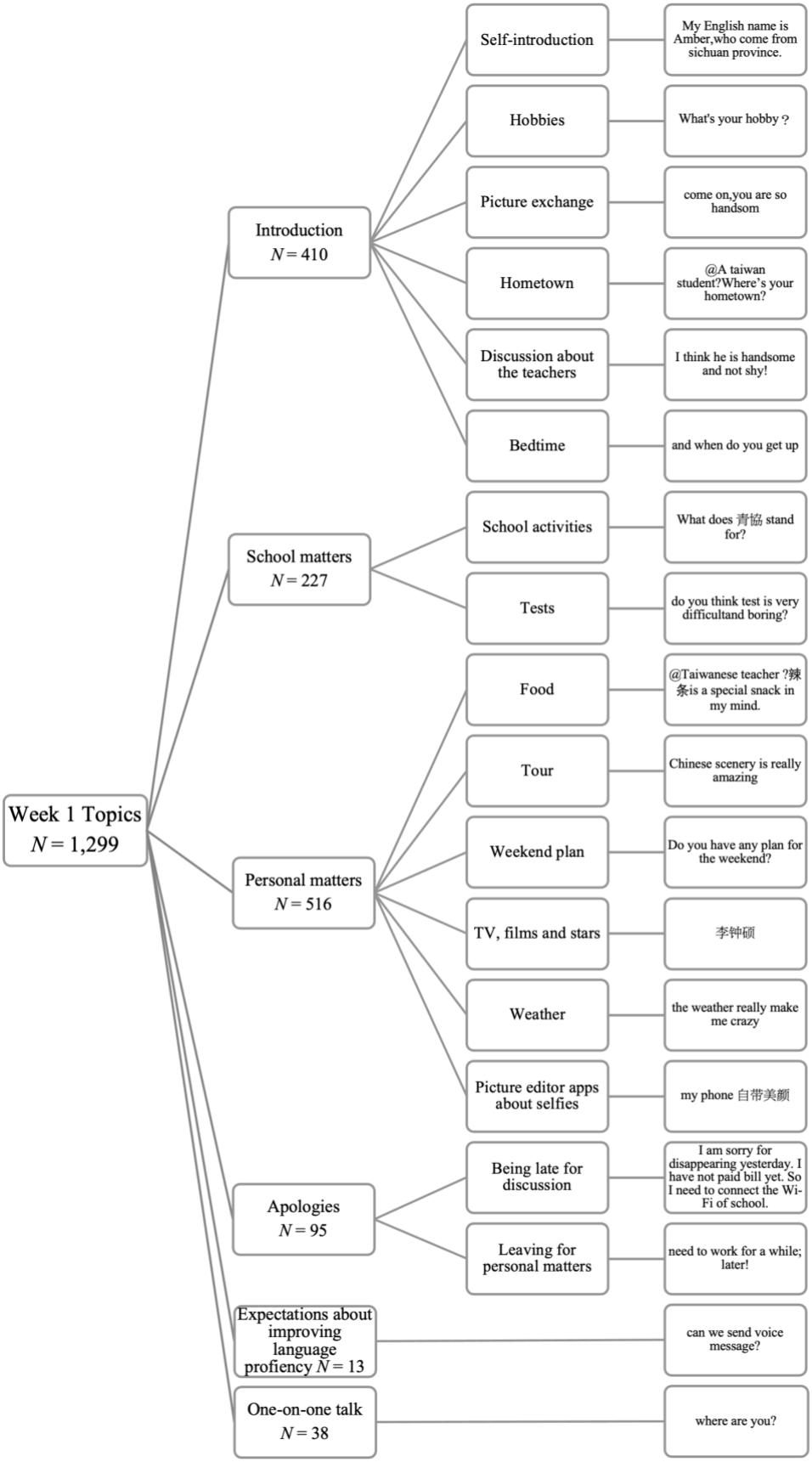

Figure 4. Discussion topics in Week 1

Table 3
Extract 1: Local weather

Line	Sender	Message
1	John	[a picture of post-snow scenery in Nanjing University]
2	John	☃☃☃☃☃☃
3	Candice	Nanjing?
4	Felicia	where
5	John	Nanjing university
6	Felicia	snow?
7	Candice	Beautiful 😃. Is it cold in Nanjing?
8	John	chilly
9	Taiwanese teacher	wow~~
10	Candice	take care of yourself
11	Annabel	wa. Oh
12	Felicia	chengdu is so warm
13	Annabel	snow
14	John	I wanna come to chengdu 😍
15	Candice	[a hyperlink of news-A cold wave in Weihai]
16	Felicia	welcome
17	Candice	look Weihai 😂
18	Candice	I will go Weihai, so cold, so I don't want to go
19	Felicia	wait for many days

Note. John is the Mainland Chinese teacher.

Results of Weeks 6–8 content analysis

As there were not many messages exchanged during Weeks 6–8, a closer analysis of the 170 messages from these weeks might provide more detailed insights into why the participants were not communicating with each other. Thus, transcripts were coded with messages being the unit of analysis to explore the participatory performance in the group.

Generally, SP occurred more frequently than CP and TP in these 3 weeks (sentence examples from the transcripts of the three presences of CoI are provided in Table 4). The number of SP messages is nearly twice as high as that of CP and 12 times higher and TP. In CP, the exploration phase had the highest frequency among the four phases. To be more specific, all 14 participants focused on exchanging basic information during their discussions. Yet, the advanced level of CP, resolution, was totally missing in the transcripts. In SP, efforts were spent on fostering interpersonal relationship and increasing group cohesion by expressing emotions, disclosing personal lives or asking personal questions – all of which may have been threatening types of communication for some students, hence their lack of engagement in the chats. Lastly, in terms of TP, there are very limited pedagogical techniques used in the discussion. We should note that messages from the student participants were not confined to the categories of SP and CP. When coding the data set, the first author kept an open mind for students' messages showing evidence of TP. However, only three techniques have been found: setting curriculum, confirming understanding through assessment and explanatory feedback and injecting knowledge from diverse sources.

Table 4
Content analysis of Weeks 6–8 messages

Indicators	Examples	No. of messages	Percentage
	CP: 32.95%		
Triggering events (8.83%)			
Recognising the problem	"sorry, i don't know it"	1	0.59%
Sense of puzzlement	"What is the name?"	14	8.24%
Exploration (21.76%)			
Information exchange	"chengdu is so warm"	33	19.41%
Brainstorming	"no"	4	2.35%
Integration (2.36%)			
Connecting ideas, synthesis	"you like Korean dramas"	2	1.18%
Creating solutions	"we can make it suitable for ourselves"	2	1.18%
Resolution (0%)			
	SP: 61.18%		
Affective (38.24%)			
Expression of emotions	"wow too early"	40	23.53%
Use of humour	"i am so clever"	2	1.18%
Self-disclosure	"I have to catch school bus 🙄"	23	13.53%
Interactive (14.7%)			
Continuing a thread	"you're up, too"	9	5.29%
Asking questions	"you speak Qinglish @ Gavin"	11	6.47%
Complimenting, expression appreciation	"Haha a good mum!"	2	1.18%
Expressing agreement	"i think so"	3	1.76%
Cohesive (8.24%)			
Phatics, salutations	"@ Luna Morning~~"	14	8.24%
	TP: 5.89%		
Instructional design and organisation (0.59%)			
Setting curriculum	"we have some final exams this week, so why don't you say something about your exam preparations?"	1	0.59%
Facilitating discourse (0.59%)			
Confirming understanding through assessment and explanatory feedback	"'這樣啊'的意思😊" (*That [a Korean expression] means 'oh, I see'.*)	1	0.59%
Direct instruction (4.71%)			
Injecting knowledge from diverse sources	"Acceptable in Mainland China HK Macau maybe Taiwan"	8	4.71%

Extract 2 in Table 5 presents a short dialogue taken from the discussion of an English expression in Week 6. In replying to a previous message, John, the Mainland Chinese teacher, sent an encouraging expression "add oil". Denise, a first-year Mainland Chinese student, immediately commented on the message that John was wrong as he had used Chinglish and she further provided the right expression "fighting" from her linguistic repertoire. Based on her comments and a follow-up question from Candice (Line 12), John further clarified the usage of the expression. There are a few findings from this short telecollaborative exchange. Firstly, although Denise misused the word "fighting" (it derives from the Korean expression "Hwaiting" to show encouragement), she surprisingly challenged her teacher's authority by replying "no" (Line 2) and "you speaking Qinglish" (Line 4). In Chinese Confucian culture, teachers have been viewed as authority figures, and it is not very common for students to disagree with their teachers in the physical classrooms. Yet, in this WeChat learning group, Denise publicly disagreed with her teacher, which offers an interesting finding that learners may perform differently according to the medium of learning and become more willing

to express their thoughts in online learning contexts than in face-to-face discussions (similar findings are in Hamid et al., 2015).

Secondly, the three CoI presences did not occur independently. Instead, CP, SP and TP often happened interchangeably. The three presences were used collectively to facilitate the WeChat discussion; TP and CP were more frequently utilised during the discussion, while SP were extensively used to end the discussion. Denise's messages from Lines 2–4 also show a good example that the three CoI presences were used to move the whole discussion into the next level, as in Line 4 Denise invited John to clarify the confusing "add oil" expression. Likewise, students did not use CP based on the four sequential levels (triggering events, exploration, integration and resolution). Rather, the four levels of CP were observed to be used in a non-cyclical manner.

Third, not only did the Mainland Chinese teacher attempt to facilitate the discussion by demonstrating TP in the group but one student participant, Denise, also tried this. In Line 4, Denise directly @-ed John, by which John received a WeChat notification. It indicates that Denise was enacting her agency by taking the initiative to explore the appropriate linguistic expression in this discoursal context. Nonetheless, the teacher failed to comment on Denise's use of "fighting" and did not facilitate more in-depth discussion regarding English varieties or World Englishes. This may be caused by the synchronous nature of the communication. Due to the fast-speed communication in WeChat, it would be less possible for the teacher to plan every possible topic, which poses great demands on the teacher's skilled and spontaneous reactions. Thus, the medium of communication mediated the teaching performance. The speed of chatting like this may be yet another reason why students did not get involved in chats they felt uncomfortable with. In several interviews, students expressed their concern that they could not find the right words in English to express their ideas easily and quickly.

Table 5
Extract 2: An English expression "add oil"

Line	Sender	Message	CoI
1	John	add oil!	SP: Cohesive – Phatics
2	Denise	no	SP: Interactive – Expressing disagreement
3	Denise	fighting	CP: Integration – Creating solutions
4	Denise	you speaking Qinglish@John	TP: Facilitating discourse – Drawing in participants and presenting questions for discussions
5	John		SP: Interactive – Expressing disagreement
6	John	This is acceptable	SP: Interactive – Expressing disagreement
7	Candice	because we do not know	CP: Exploration – Information exchange
8	Denise		SP: Affective – Expression of emotions
9	Denise	really?	CP: Triggering events – Sense of puzzlement
10	Candice		SP: Affective – Expression of emotions
11	John	Acceptable in Mainland China HK Macau maybe Taiwan	TP: Direct instruction – Injecting knowledge
12	Candice	only in China?	CP: Triggering events – Sense of puzzlement
13	Denise	soga	SP: Cohesive – Phatics
14	John	Depends	TP: Direct instruction – Injecting knowledge
15	Denise	I get it	SP: Cohesive – Phatics
16	Candice	I learn a new way to say it 	SP: Affective – Expression of emotions
17	Denise	right	SP: Cohesive – Phatics

Note. John is the Mainland Chinese teacher.

Discussion

The quantitative descriptive data presented show that the student WeChat group was highly active in the beginning of the project but that their participation markedly declined as the project went on, indicating that the project was not entirely successful. The thematic analysis of the first week transcript revealed that, without prescribed topics, students were engaged in a wide range of mostly predictable safe topics in their discussions. The analysis of the final three-week discussion demonstrated that some of the participants were more engaged in social interactions than in cognitive and teaching activities and there may have been feelings from participants of not knowing what to discuss, and trepidations about some of the topics and types of interactions. In terms of cognitive engagement, the discussion mostly hovered around the surface level of information exchange (triggering events and explorations). Consistent with the findings of Koh et al. (2010), project design of telecollaboration and teacher's facilitation of the group's chat contribute to students' variations in knowledge construction. One reason, as argued by Kanuka et al. (2007), is that "highly structured, planned, confrontational and demanding" (p. 268) tasks are more likely to facilitate students' cognitive engagement. In addition, teacher guidance plays a critical role in facilitating students' discussion beyond the surface thinking level and information exchange.

Based on the findings, we propose a conceptual model (Figure 5) on delineating the factors that impact a telecollaborative project. We argue that the core of a successful telecollaboration experience is the interconnected dynamics among CP, TP and SP. The CoI framework can be regarded as the springboard of telecollaborative learning, based on which instructors and learners can better understand their roles. With respect to instructors' functions, we need to be aware that the affordances of new technologies do not come without challenges for both learners and teachers and that these challenges may be complex and difficult to deal with. As can be seen from Figure 5, promoting online learning is a complex and challenging task, and a number of interconnecting variables, that is, project design, learner autonomy, mode and medium and outcome, need to be taken into account for telecollaborative learning.

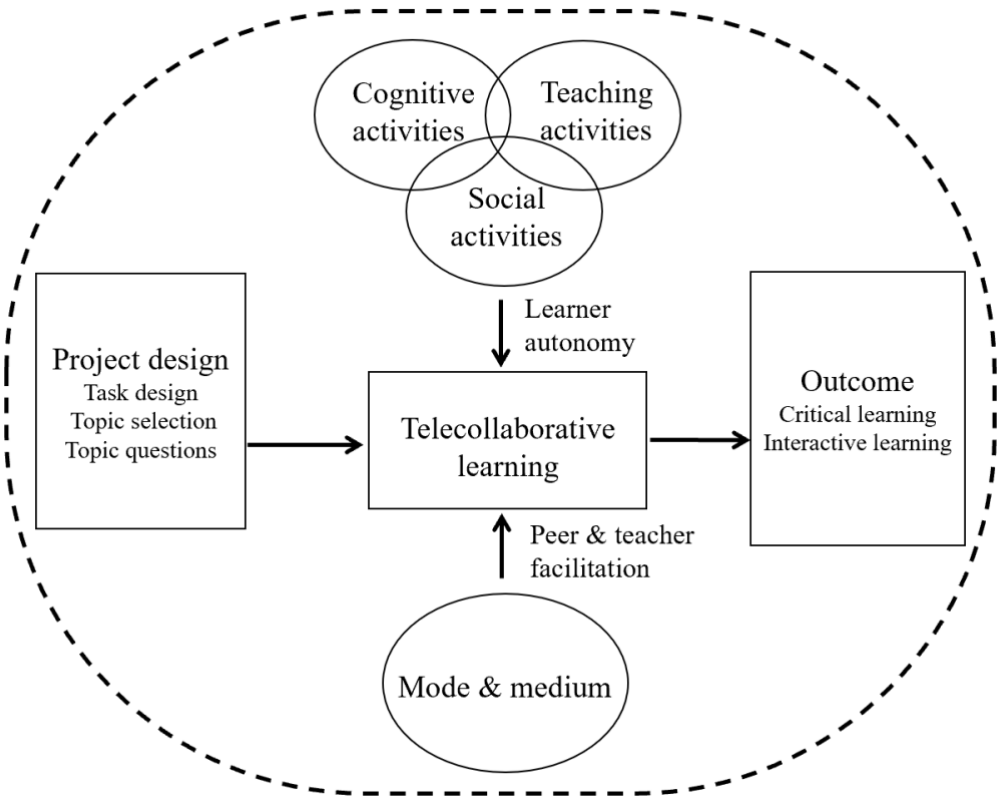

Figure 5. A conceptual model of telecollaborative learning

Firstly, project design, including task design, topic selection and topic questions, is essential to telecollaborative learning. As O'Dowd (2016) has maintained, engaging learners with safe topics may not be highly beneficial for their understanding of another culture and critical reflection of their native culture. Such argument highlights the importance of topic selection and design. In line with Lee (2011), topic selection plays an important role in participants' online engagement. It appears, therefore, that some sort of teacher guidance and support is essential for promoting learners' critical inquiry into learning (O'Dowd & Ware, 2009). However, in the interviews, students reported that they felt lost and had little idea of what they could contribute to the discussion. It appears that apart from the choice of topics, more sophisticated design of the topic questions is also necessary. In another study, Garrison and Cleveland-Innes (2005) maintained "[s]tudents must be provided structure and leadership to become engaged and responsible for approaching learning in a deep manner" (p. 144). We defined "structure" here as teacher guidance, facilitation and direction for project design, including appropriate content and assessment of topics. Although the participants were engaged in a number of discussion topics, especially in Week 1, our data show that the depth of online discussions in the students' second language was limited. As argued by Hafner et al. (2015), even when using project-based learning, students need clear structure in their learning. Without this structure, our students found it difficult to enact their own agency and take control of their critical and interactive learning.

Secondly, learner autonomy is a key variable in our telecollaborative online learning framework. Our findings suggest students were mostly engaged in social activities or SP in the CoI framework, while a lack of sophisticated cognitive activities (CP) was reported. Meanwhile, based on the content analysis of WeChat messages, TP was not strong during Weeks 6 to 8 as only about 6% of the messages were coded as TP. Extract 2 shows that the participants failed to take advantage of the fleeting chances to move the discussion into more in-depth levels, partly due to their inability to be spontaneous in their chats. Yet, we witnessed TP not only from the teacher, but also Denise, a first-year Mainland Chinese student, who demonstrated some evidence of TP (see Extract 2, Table 5). From these findings, we argue that a shared responsibility of exploiting different strategies to encourage participation-facilitation should be supported among student and teacher participants (Miller, 2016). Learners, especially in online learning contexts, should "take partial or total ownership of their learning process" (Teng, 2019, p. 3). In order to do this, students need to develop some sense of autonomy to take charge of their learning. Chinese students tend to view teachers as knowledge transmitters and they see themselves as passive recipients rather than active producers of knowledge (Wu & Miller, 2020). Against this cultural backdrop, promoting students' autonomy in such telecollaborative exchange is, in essence, a challenging task that requires agents to act independently and interdependently (Hafner & Miller, 2011). Our data highlight a need to build awareness of and familiarisation of strategies that would facilitate students' agency in online discussion by considering social activities, teaching activities and cognitive activities more carefully.

Third, when designing telecollaborative learning tasks, instructors need to consider the mode and medium. In terms of modes, research has suggested that, because of the various choices of modes (e.g., text, voice, emoji), WeChat affords users a constructive and relaxing environment in which to develop critical thinking (Wang et al., 2016). Yet, our quantitative data show that students in this cross-strait exchange relied heavily on the text mode of communication. Although the Mainland Chinese participants were aware of the multiple modes in WeChat, they did not fully make use of them. Apart from the use of modes to improve the process of online discussion, there is also a need to consider the nature of a medium. We found that the synchronous nature of WeChat communication may not be conducive to the development of advanced levels of CP. Students and teachers were required to respond relatively quickly to each other's messages in a cognitively relevant and socially appropriate manner. Thus, in line with Stein et al. (2007), while instant messaging contributes to the authenticity of communication and the interactivity among the interlocutors, it negatively impacts on the level of critical thinking. Contributing to previous studies, we propose that peer feedback and TP (e.g., encouraging diverse perspectives, asking for clarifications) are crucial in online discussion groups.

By taking the abovementioned factors into account, we hope that teachers can provide critical and interactive learning experience for their students and that they will benefit from such experience. It should be noted that we did not include any assessment in this project. It is worthwhile to consider appropriate methods for evaluating learners' performances so as to further improve their learning experience and outcomes.

Implications based on the model

Given the ever-increasing role of teachers in online learning (Lee, 2011), instructors should not only consider their roles in a pre-project phase (e.g., project design, task design, topic questions and topic selection) but also contribute to the performance and engagement of learners rather than be a silent observer. If the design and implementation of the project meets with the needs and wants of the learners, then there is a good chance that the learners will, with teacher encouragement, enact their agency and become more autonomous as learners. Based on the model and the findings, we propose the following guidelines for the implementation of telecollaborative learning to foster learners' knowledge construction.

- First, project design. The project design must adequately fit the specific target students' wants or needs. Assigning students with motivational topics or tasks (see a discussion of controversial topics vs safe topics in Miller & Wu, 2018) can engage them in evaluating the fit between problem solutions and contextual needs. Topic questions with enough authenticity and which suit learners' interest should be suitably complex to warrant iterative design–feedback–refinement cycles. Teachers should also guide students to progress from topic exploration to problem solutions.
- Second, learner autonomy. Learners in the present study were challenged to maintain their engagement in telecollaborative learning. Teachers should pay attention to cognitive, teaching and social activities that can facilitate learners' autonomy in telecollaborative learning. For example, teachers could guide students to articulate their learning through concretising their knowledge construction process. Such process is essential to stimulate social construction of knowledge when accompanied by feedback, queries and critique from peers and teachers. The final purpose of building an awareness of autonomy in telecollaborative learning is to advance students beyond their current levels of knowledge construction.
- Third, mode and medium. It is important for teachers to consider ways of encouraging students to make better use of the affordances of various modes and mediums. By doing so, teachers expect that our digital resident students can develop their multimodal literacies. The development of multimodal literacies has been viewed as an essential task in today's language learning (Kurek & Müller-Hartmann, 2017). As learners become more comfortable with this learning approach, they may begin to explore the different modes and mediums of online communication – all of which would eventually lead to more creative, critical and interactive learning.
- Lastly, though the current project did not assign any credit to this learning project, we suggest that future studies further explore the design of assessment tasks. To support peer and teacher facilitation, instructors may consider using learning-oriented assessment (see a detailed discussion in Carless, 2007) by transforming assessment tasks into learning tasks, involving students as assessors and providing feedback as feedforward.

Conclusions

This article reports the complexities and challenges from a cross-strait telecollaborative project between Mainland Chinese and Taiwanese students based on the data from interviews and chat transcripts. The challenges came from multiple sources including the multimodal feature of WeChat (e.g., voice messages), the proper support from the teacher and the design of the discussion topics. Beneath these broad challenges, we have also found that a variety of factors were intertwined, impacting on the students' perceptions of and performance in telecollaborative exchange, such as the physical environment (e.g., library vs dorm) and the medium of communication (e.g., synchronous vs asynchronous) – all of which add to the complexity of the task. Based on the findings, we suggest that careful task design with teacher support should be implemented to support participants' online discussions. Teachers should consider enhancing their visibility in the group by promoting participants' contribution through different techniques rather than relying solely on the development of group cohesion.

Similar to other studies in this area, the current study has some limitations. Firstly, the study focused only on the perceptions from the Mainland Chinese student participants. We need to acknowledge that the Taiwanese students may have had other perceptions and challenges. Secondly, the project shares the common criticism of telecollaborative projects – that of a short duration. It would be interesting to witness if and how participants changed their online chatting behaviour in a second language over a prolonged period of time. Thirdly, findings should be interpreted with caution as they may not be generalisable to other learning contexts. It would be more insightful to see how learners behave with more structured

telecollaborative learning. Despite these limitations, the current findings support the use of telecollaboration as a potential educational tool. What practitioners and researchers need to do in future research is to seek ways to anchor telecollaborative learning activity within a sound pedagogy approach to maximise its value to language learning, as suggested in our conceptual model of telecollaborative learning.

References

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706QP063OA

Carless, D. (2007). *How assessment supports learning: learning-oriented assessment in action*. Hong Kong University Press. https://doi.org/10.5790/hongkong/9789622098237.001.0001

Chun, D. M. (2015). Language and culture learning in higher education via telecollaboration. *Pedagogies: An International Journal*, *10*(1), 5–21. https://doi.org/10.1080/1554480X.2014.999775

Flowers, S., Kelsen, B., & Cvitkovic, B. (2019). Learner autonomy versus guided reflection: How different methodologies affect intercultural development in online intercultural exchange. *ReCALL*, *31*(1), 221–237. https://doi.org/10.1017/S0958344019000016

Garrison, R. (2016). *Thinking collaboratively: Learning in a community of inquiry*. Routledge. https://doi.org/10.4324/9781315740751

Garrison, R. (2017). *E-learning in the 21st century: A community of inquiry framework for research and practice*. Routledge. https://doi.org/10.4324/9781315667263

Garrison, R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, *15*(1), 7–23. https://doi.org/10.1080/08923640109527071

Garrison, R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, *10*(3), 157–172. https://doi.org/10.1016/j.iheduc.2007.04.001

Garrison, R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *American Journal of Distance Education*, *19*(3), 133–148. https://doi.org/10.1207/s15389286ajde1903

Hafner, C. A., Li, D. C. S., & Miller, L. (2015). Language choice among peers in project-based learning: A Hong Kong case study of English language learners' plurilingual practices in out-of-class computer-mediated communication. *Canadian Modern Language Review*, *71*(4), 441–470. https://doi.org/10.3138/cmlr.2712

Hafner, C. A., & Miller, L. (2011). Fostering learner autonomy in English for science: A collaborative digital video project in a technological learning environment. *Language Learning & Technology*, *15*(3), 68–86. https://www.lltjournal.org/item/2749

Hafner, C. A., & Miller, L. (2019). *English in the disciplines: A multidimensional model for ESP course design*. Routledge. https://doi.org/10.4324/9780429452437

Hamid, S., Waycott, J., Kurnia, S., & Chang, S. (2015). Understanding students' perceptions of the benefits of online social networking use for teaching and learning. *The Internet and Higher Education*, *26*, 1–9. https://doi.org/10.1016/j.iheduc.2015.02.004

Hockly, N. (2011). The digital generation. *ELT Journal*, *65*(3), 322–325. https://doi.org/10.1093/elt/ccr041

Kanuka, H., Rourke, L., & Laflamme, E. (2007). The influence of instructional methods on the quality of online discussion. *British Journal of Educational Technology*, *38*(2), 260–271. https://doi.org/10.1111/j.1467-8535.2006.00620.x

Koh, J. H. L., Herring, S. C., & Hew, K. F. (2010). Project-based learning and student knowledge construction during asynchronous online discussion. *The Internet and Higher Education*, *13*(4), 284–291. https://doi.org/10.1016/j.iheduc.2010.09.003

Kurek, M., & Müller-Hartmann, A. (2017). Task design for telecollaborative exchanges: In search of new criteria. *System*, *64*, 7–20. https://doi.org/10.1016/j.system.2016.12.004

Lee, L. (2011). Blogging: Promoting learner autonomy and intercultural competence through study abroad. *Language Learning & Technology*, *15*(3), 87–109. https://doi.org/10125/44264

Lin, C. H., & Warschauer, M. (2015). Online foreign language education: What are the proficiency outcomes? *Modern Language Journal*, *99*(2), 394–397. https://doi.org/10.1111/modl.12234_1

Littlewood, W. (2014). Communication-oriented language teaching: Where are we now? Where do we go from here? *Language Teaching*, *47*(3), 349–362. https://doi.org/10.1017/S0261444812000134

Miller, L. (2016). Collaborative script writing for a digital media project. *Writing & Pedagogy*, *8*(1), 215–228. https://doi.org/10.1558/wap.v8i1.27593

Miller, L., & Wu, J. G. (2018). From structured to unstructured learning via a technology-mediated learning framework. *EAI Endorsed Transactions on e-Learning, 5*(17), 1–9. https://doi.org/10.4108/eai.25-9-2018.155575

Munezane, Y. (2020). A new model of intercultural communicative competence: Bridging language classrooms and intercultural communicative contexts. *Studies in Higher Education*, 1–18. https://doi.org/10.1080/03075079.2019.1698537

O'Dowd, R. (2016). Emerging trends and new directions in telecollaborative learning. *CALICO Journal*, *33*(3), 291–311. https://doi.org/10.1558/cj.v33i3.30747

O'Dowd, R., & Ritter, M. (2006). Understanding and working with 'failed communication' in telecollaborative exchanges. *CALICO Journal*, *23*(3), 623–642. https://doi.org/10.1558/cj.v23i3.623-642

O'Dowd, R., & Ware, P. (2009). Critical issues in telecollaborative task design. *Computer Assisted Language Learning*, *22*(2), 173–188. https://doi.org/10.1080/09588220902778369

Rienties, B., Lewis, T., O'Dowd, R., Rets, I., & Rogaten, J. (2020). The impact of virtual exchange on TPACK and foreign language competence: Reviewing a large-scale implementation across 23 virtual exchanges. *Computer Assisted Language Learning*, 1–27. https://doi.org/10.1080/09588221.2020.1737546

Skovholt, K., Grønning, A., & Kankaanranta, A. (2014). The communicative functions of emoticons in workplace e-mails::-). *Journal of Computer-Mediated Communication*, *19*(4), 780–797. https://doi.org/10.1111/jcc4.12063

Stein, D. S., Wanstreet, C. E., Glazer, H. R., Engle, C. L., Harris, R. A., Johnston, S. M., Simons, M. R., & Trinko, L. A. (2007). Creating shared understanding through chats in a community of inquiry. *The Internet and Higher Education*, *10*(2), 103–115. https://doi.org/10.1016/j.iheduc.2007.02.002

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications. https://doi.org/10.4135/9781452230153

Tang, Y., & Hew, K. F. (2019). Examining the utility and usability of mobile instant messaging in a graduate-level course: A usefulness theoretical perspective. *Australasian Journal of Educational Technology*, *35*(4), 128–143. https://doi.org/10.14742/ajet.4571

Teng, F. (2019). *Autonomy, agency, and identity in teaching and learning English as a foreign language*. Springer. https://doi.org/10.1007/978-981-13-0728-7

Traxler, J., & Kukulska-Hulme, A. (Eds.). (2016). *Mobile learning: The next generation*. Routledge. https://doi.org/10.4324/9780203076095

van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Kluwer Academic Publishers. https://doi.org/10.1007/1-4020-7912-5

Wang, Y., Fang, W. C., Han, J., & Chen, N. S. (2016). Exploring the affordances of we chat for facilitating teaching, social and cognitive presence in semi-synchronous language exchange. *Australasian Journal of Educational Technology*, *32*(4), 18–37. https://doi.org/10.14742/ajet.2640

Wu, J. G. (2017). Teacher's presence in synchronous mobile chats in a Chinese university. *The Journal of Asia TEFL*, *14*(4), 778–783. https://doi.org/10.18823/asiatefl.2017.14.4.13.778

Wu, J. G. (2018). Mobile collaborative learning in a Chinese tertiary EFL context. *TESL-EJ*, *22*(2), 1–15. http://www.tesl-ej.org/wordpress/issues/volume22/ej86/ej86int/

Wu, J. G., & Miller, L. (2020). Improving English learners' speaking through mobile-assisted peer feedback. *RELC Journal*, *51*(1), 168–178. https://doi.org/10.1177/0033688219895335

Wu, J. G., & Miller, L. (2021). Raising native cultural awareness through WeChat: A case study with Chinese EFL students. *Computer Assisted Language Learning*, *34*(4), 552–582. https://doi.org/10.1080/09588221.2019.1629962

Xu, Y., & Carless, D. (2017). 'Only true friends could be cruelly honest': Cognitive scaffolding and social-affective support in teacher feedback literacy. *Assessment and Evaluation in Higher Education*, *42*(7), 1082–1094. https://doi.org/10.1080/02602938.2016.1226759

Yang, S. J. (2020). Affordances and challenges of telecollaboration for pre-service teachers. *Language Learning & Technology*, *24*(3), 30–41. https://www.lltjournal.org/item/3157

Corresponding author: Mark Feng Teng, markteng@bnu.edu.cn

Please cite as: Wu, J. G., Teng, M. F., & Miller, L. (2022). Challenges in a mobile English telecollaborative project: Towards a conceptual model. *Australasian Journal of Educational Technology, 38*(1), 1–19. https://doi.org/10.14742/ajet.6371