Testing Principles of Language Learning in a Cyber Face-to-Face Environment

Nian-Shing Chen
Department of Information Management, National Sun Yat-sen University, Taiwan // Tel: +886 7 5252510 // Fax: +886 7 5254799 // nschen@faculty.nsysu.edu.tw

Yuping Wang
School of Languages and Linguistics, Griffith University, Australia // Tel: +61 7 3875 7537 // Fax: +61 7 3875 6766 // y.wang@gu.edu.au

ABSTRACT
This article discusses the application of the established principles of instructed language learning in a cyber face-to-face environment supported by an advanced Synchronous Learning Management System (SLMS). Following a critical review of the use of SLMS in distance language learning, the main body of the article focuses on the discussion of results from an empirical study, in reference to the relevant principles of instructed language learning formulated by Ellis (2005). These results indicate that principles of instructed language learning for traditional classroom-based learning are equally applicable in cyber face-to-face learning, but with their own characteristics. Recommendations for the effective use of SLMSs for online synchronous language learning are also put forward.

Keywords
Synchronous learning management system, Distance language learning, Cyber face-to-face interaction, Principles of instructed language learning, Synchronous cyber classroom

Introduction
In the last 20 years or so, research in CMC (Computer Mediated Communication) has witnessed tremendous developments both in terms of theory and practice. However, what is still needed, as White (2006: 249) identifies, “is the development of research tools, methods and approaches appropriate to the new paradigms for distance language learning”. There has been little research that has systematically tested principles of instructed language learning in a distance context supported by online Synchronous Learning Management Systems (SLMSs). Different from standalone technologies such as videoconferencing and audio conferencing tools, a SLMS employs a combination of synchronous and asynchronous technologies such as audio, video and other data sharing and interaction tools (e.g., an interactive whiteboard, document sharing, desktop sharing and multimedia discussion forums) to provide an integrated learning environment where multimodal interaction with both human and materials can be facilitated. Such interaction resembles most closely but is significantly different from face-to-face interaction in the traditional classroom. Thus the concept of “cyber face-to-face” interaction is used here to denote the differences. Since such a learning environment is still new to us, we are still unsure of its potentials for distance language learning which requires constant multi-way interaction in text, audio and video. For example, in what ways does cyber face-to-face interaction differ from face-to-face interaction in the traditional classroom? Can principles of instructed language learning be readily applied in a cyber classroom, and if so, in what ways? This article aims to answer these questions by testing some of the principles of instructed language learning in a SLMS-supported distance language learning environment. We will first review the current research development in the use of Learning Management Systems (LMSs) for facilitating interaction in distance language learning, and then present the ten instructed language learning principles proposed by Ellis (2005). The article will then discuss the results of an empirical study in which some of these principles were applied and tested. These results consist of examples of what happened in cyber face-to-face speaking tutorials, and will be discussed in reference to the relevant principles of instructed language learning, the characteristics of distance language learning and the potentials of cyber face-to-face learning. Recommendations for the effective use of SLMSs for online synchronous language learning will also be put forward.
The provision of interaction in distance language learning and the capacities of Learning Management Systems

Interaction, especially in the form of conversation, has long been considered crucial to L2 (Second Language) acquisition. However, the provision of interaction has also been the greatest challenge facing distance language learning. In other words, despite the availability of various educational technologies, learning to speak the target language still remains the most challenging of all the skills (e.g., reading and writing) that distance language learners must acquire. Hauck and Hampel (2005:259) claim that “providing opportunities for the development of interactive oral and aural skills has presented a major challenge for the course developer”. Until recently, the provision of oral and visual interaction in distance language learning has been technically unsatisfactory if not totally unavailable in some circumstances. As a result, many established principles for communicative and interactive L2 learning have not been tested in a rich media-supported environment.

To improve the provision of interaction in distance language education has long been the focus of many studies on CMC (e.g., Hastie et al., 2007; Kotter et al., 1999; Lamy, 2004; Levy & Kennedy, 2004; Shield et al., 2000; Sykes, 2005;; Wang, 2004a, 2004b, 2006, 2007). CMC-based interaction can be categorized into three categories: text-based, audio-based and video-based (Wang 2004a). Many studies only concern themselves with the development of a certain skill (e.g. writing or speaking skill) supported by one type of the CMC tools (e.g., text chat, audio or videoconferencing). Research into the combination of text, oral and visual interaction supported by an integrated system such as a Learning Management System (LMS) is still lacking. The paucity of such research is partly due to the unavailability of effective LMSs for language learning, especially for synchronous distance language learning. Currently, LMSs can be roughly classified as Asynchronous LMSs (ALMS) and Synchronous LMSs (SLMS). The majority of the commercially available LMSs are asynchronous only, functioning as a teaching material management platform without the provision of synchronous text chat, data, audio and videoconferencing. Blackboard, WebCT, Moodle, and First Class (see Inglis, 2001) are some of the examples of an ALMS. Their functionalities include learning materials upload, discussion forums, individual or group emailing and assignment returns. Such systems are often used to supplement on-campus teaching. They are not ideal platforms for distance language learning as they do not support synchronous interaction in rich media forms such as cyber oral and visual interaction. As far as distance language learning is concerned, a SLMS is superior to an ALMS as, apart from the functionalities supported by an ALMS, it also offers synchronous conferencing supported by audio or videoconferencing tools, an electronic Whiteboard and other data conferencing tools. An ideal SLMS should support a learning environment in which multimodal interaction happens in real time in a synchronous manner. Such interaction, although different in many ways, resembles most closely physical face-to-face interaction, and can be used as a main platform for both managing and delivering distance language learning. For comparisons of LMSs, please see William Horton Consulting (2008), Web Conferencing Solutions (2008), and Alliance for Community Technology (2004).

The SLMS evaluated in this study is called Collaborative Cyber Community (hereafter 3C). The main reason for adopting 3C in our study was that it supports a much needed-dimension in distance language learning: quality cyber face-to-face interaction. 3C is both a learning management and delivery system facilitating the requirements of a complete language course offered online both asynchronously and synchronously. (For more discussion on 3C, see Chen, et al., 2005; Wang and Chen, 2007.)

We argue that it is time that the pedagogical values of the multimodal interaction supported by SLMSs was examined. This is more because of the urgent needs of distance learners for effective language acquisition than because of the availability and accessibility of advanced technologies. Thus the study presented here will investigate the ways in which principles of instructed language learning can be effectively applied in a cyber face-to-face environment supported by a SLMS.

Principles of instructed language learning

This study hypothesizes that established principles of instructed language learning for traditional classroom-based learning are equally applicable (but not totally replicable) in cyber face-to-face learning, despite the fact that there are significant differences between the two learning environments. This premise is grounded in our belief that the communicative nature of language learning in both environments remains the same and that technology is only a tool to help improve learning outcomes.
Ellis (2005: 209) draws together “findings from a range of second language acquisition studies” and formulates 10 general principles of instructed language learning. They are:

1. Instruction needs to ensure that learners develop both a rich repertoire of formulaic expressions and a rule-based competence.
2. Instruction needs to ensure that learners focus predominantly on meaning.
3. Instruction needs to ensure that learners also focus on form.
4. Instruction needs to be predominantly directed at developing implicit knowledge of the L2 while not neglecting explicit knowledge.
5. Instruction needs to take into account the learner’s built-in syllabus.
6. Successful instructed language learning requires extensive L2 input.
7. Successful instructed language learning also requires opportunities for output.
8. The opportunity to interact in the L2 is central to developing L2 proficiency.
9. Instruction needs to take account of individual differences in learners.
10. In assessing learner’s L2 proficiency it is important to examine free as well as controlled production.

These principles neatly sum up the current understanding of L2 acquisition theories and practices. Although Ellis (2005: 210) called these principles “provisional speculations”, they have been attested in L2 classroom research and practice. However, there has been little research on these principles applied in an cyber face-to-face environment supported by a SLMS, although some research has focused on one or two aspects of language learning (e.g., Hampel, 2006; Rosell-Aguilar 2005 on task design). To investigate in what ways some of these principles can be applied in cyber face-to-face learning is precisely the focus of our study. We will present findings from an empirical study in which some of these principles were applied in a distance language learning context supported by a SLMS, 3C.

**Figure 1. Major functions of 3C**

### Methods

#### The SLMS – 3C

3C, the Collaborative Cyber Community learning platform, was developed by the National Sun Yat-sen University in Taiwan. Its server presently has a capacity to support up to 500 online asynchronous users and 200 online synchronous users simultaneously. Figure 1 summarizes the major functions of 3C.

As shown in Figure 1, 3C has two main environments: the “teacher’s office” and the “classroom”. The teacher’s office can be accessed only by the teacher, for student administration and planning learning activities, such as...
uploading learning resources and designing content links. The “classroom” can be accessed by both the teacher and the learner, and it has two modes: the asynchronous and synchronous modes. The asynchronous mode is available to learners 24 hours a day, where audio, video and text-based learning resources (e.g., discussion boards, lecture notes, web-based course materials, and video recordings of cyber face-to-face sessions) can be accessed. As far as interactive language learning is concerned, the most valuable component in 3C is its synchronous mode with its main and sub cyber face-to-face classrooms. As shown in Figure 2, these classrooms feature five major windows: the main audio and video, the control panel, the text chat box, the Whiteboard and the sub-video windows. Up to 18 sub-video windows can be displayed at the same time. This cyber classroom is also supported by versatile synchronous data sharing tools, such as Desktop Sharing, Window Capture, Joint Web Browsing, Remote Control and collaborative annotation tools (e.g., pens and pen colours).

Figure 2. The synchronous cyber classroom

The procedure

A pilot study was carried out in late 2005 to investigate the application of some of the principles of instructed language learning in the 3C-supported environment. Seven (3 female and 4 male) adult students enrolled in the intermediate level of the Open Learning Chinese Program at Griffith University volunteered to participate in the
study. Five of them were from different parts of Australia, one from Hong Kong and one from the Czech Republic. Each participant was supplied with a Web camera, a headset and a handbook containing instructions on how to set up the web camera, headphones and the videoconferencing tool. Participants were asked to install the equipment and software by themselves and test their set up with a technician before the cyber face-to-face tutorials started.

A two-hour speaking tutorial each week for 10 weeks was conducted with these participants in the “cyber face-to-face classroom”. Both the teacher and the students attended the tutorials from home. In these tutorials, various meaning-based tasks (role plays, surveys, bingo games etc.) were guided by the teacher and performed by the participants. The audio and video quality of the tutorials was found to be satisfactory for language learning, even with students using a dial-up connection. Occasional video or audio delay was experienced but was not significant enough to affect learning outcomes (see, Wang and Chen, 2007). All the tutorials were digitally video-recorded by 3C.

Data analysis

The recordings of these tutorials were transcribed, capturing the interaction through text chat, audio, video and other online tools such as the Whiteboard and Joint Web Browsing. Segments of transcripts were selected for analysis in this article in accordance with their relevancy to the principles of language learning discussed here. The selected transcripts will be analysed using the Conversation Analysis methods as described by scholars such as Sacks (1992), Psathas (1995) and Hutchby and Wooffitt (1998). Conversation Analysis is a methodology used to analyse units or structures of a conversation, such as turn taking, in order to determine how interlocutors negotiate for meaning. To assist the analysis, screen activities of the tutorials were also captured to demonstrate what actually happened in the classroom.

We acknowledge that the number of participants is small. However, our analysis focuses on transcribed excerpts from the cyber face-to-face sessions, not on the number of replies from the participants. No post-test evaluation was deemed necessary to verify the pedagogical framework discussed here as one of the authors was the teacher who conducted the cyber face-to-face sessions.

Results

Since the research focuses on interaction in distance language learning, only the most relevant principles, namely, principles 2, 3, 6, 7, and 8, are evaluated here. These principles will be further discussed together with the data from this research.

Principle 2: Instruction needs to ensure that learners focus predominantly on meaning

A task-based approach was adopted, in order to create opportunities for learners to attend to the meaning of the language, i.e. “the highly contextualized meanings that arise in acts of communication” (Ellis, 2005: 211). In our cyber face-to-face sessions, focus on meaning was predominantly achieved during the completion of various meaning-based tasks. These tasks include group presentations, noughts and crosses listening exercises, discussing family photos, bingo games, surveys and role plays. The target language, Chinese, was used mostly in task completion. Figure 3 illustrates what happened in a bingo game on practicing numbers and prices in Chinese. Three of students compete by ticking the correct numbers in the game table while listening to the teacher calling out the numbers in Chinese.

We can see in Figure 3 that S1 (using a blue colour pen) wins the game because she is the first one to get three correct numbers in a row. S2 (red) is close behind and S3 (green) only gets two correct numbers. Other students are also involved in the game by typing the numbers in the text-chat box as they hear the prices being called (see the lower left corner of the screen in Figure 3).

Our data indicates that focus on meaning can be facilitated by many useful tools embedded in 3C. When designing a task, it is important to take into consideration the various tools offered by a SLMS. For example, the collaborative
annotation functions in 3C allow multiple participants to write, type, draw and edit at the same time. In such a learning environment, multiple sources of spontaneous input from a group of learners can occur, and group discussions, such as concept mapping and negotiation of meaning, can be effectively facilitated. The bingo game presented above represents a case in point. In this game, participants engaged in group activities using the collaborative annotation functions (i.e., the pen and pen colours) simultaneously. This example also shows that, although the bingo game was an activity for three students, other students could also participate at the same time through text chat.

Figure 3. A noughts and crosses game in Session 9

**Principle 3 Instruction needs to ensure that learners also focus on form**

Acknowledging the existence of various interpretations of focus on form, this research defines focus on form following Long (1991) and Long & Robinson (1998). Long (1991: 45-46) defines focus on form as an occasion that “overtly draws students’ attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication”. Radwan (2005: 71) argues that “meaning-focused instruction alone may not be sufficient for learners to acquire the linguistic elements of the target language” and that there is “a positive relationship between drawing learner’s attention to the formal properties of the target language and language development”. This was also confirmed in our research. In this research, opportunities for focus on form were created on three levels: pre-task, during task and post task.

Focus on form prior to the start of task performance usually happened in the first 10 to 15 minutes of each tutorial when key grammatical points were explained to ensure their appropriate use in task performance. This process of focus on form was adequately supported by the various tools offered by 3C, such as the Whiteboard, text chat and the audio. For example, in Session 8, before asking the participants to conduct a survey about distance, the teacher uploaded a lecture note outlining the main structures to be used when talking about distance (see Figure 4) and
explained the structures through the audio, the video and the Whiteboard. She then checked the students’ understanding by asking them to make up sentences using these key structures (see Table 1). Figure 4 also shows that the key points on the lecture note were highlighted through colors and an animation pen.

Figure 4. Lesson 8 - Focus on form prior to task performance

Table 1. Session 8 - Talking about distance

<table>
<thead>
<tr>
<th>Time</th>
<th>Text chat</th>
<th>Oral interaction</th>
<th>Visual interaction</th>
<th>SLMS tools used</th>
</tr>
</thead>
<tbody>
<tr>
<td>43:32</td>
<td>T: How do you say ‘what place is your home close to’? Use the li structure.</td>
<td></td>
<td></td>
<td>Audio (via Mic/speaker)</td>
</tr>
<tr>
<td>43:38</td>
<td>S2: Um…wojia li, ah, nijia li shenme difang haha… (Um, my home from, ah, which place is your home…)</td>
<td></td>
<td></td>
<td>Visual (via web camera)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The pointer for pointing to items on the lecture note.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The Whiteboard showing the lecture notes</td>
</tr>
<tr>
<td>44:59</td>
<td>...</td>
<td></td>
<td></td>
<td>Annotate the character for ‘jin’. (see Figure 6)</td>
</tr>
<tr>
<td>44:01</td>
<td>S2: Ah…close to, um…wo wangle, duibuqi. (Ah, close to, um…I forgot. Sorry.)</td>
<td></td>
<td></td>
<td>S2 looks down and looks up again.</td>
</tr>
<tr>
<td>44:07</td>
<td></td>
<td></td>
<td></td>
<td>Annotation pen for highlighting key points on the Whiteboard (see red circles)</td>
</tr>
<tr>
<td>44:15</td>
<td>S2: Aha, nijia li shenme difang jin ma? Ah, just ‘jin’.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44:16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44:19</td>
<td>T: Yeah. No ‘ma’, yeah.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the above excerpt, S2 was not sure about the use of “jin” in the beginning. After the teacher’s explanation, she was finally able to use the correct structure to render “which place is your home close to?” into Chinese. This type of focus on form was often controlled and guided by the teacher, with a specific linguistic aim to achieve.

In contrast, focus on form which happened during task completion was more random and spontaneous. This type of focus on form occurred when interaction in the target language broke down due to unfamiliar or unknown linguistic forms or due to teacher’s correction of grammatical mistakes made by the students. Interaction resumed when the breakdowns were repaired, usually through explanations or interactional modifications (see Table 2).

**Table 2. Session 7 - Focus on form during a role play**

<table>
<thead>
<tr>
<th>Time</th>
<th>Text chat</th>
<th>Oral interaction</th>
<th>Visual interaction</th>
<th>SLMS tools used</th>
</tr>
</thead>
<tbody>
<tr>
<td>57: 49</td>
<td>S2: … ah, Yingwen bushi ni de muyu ma? (Right, I think studying English is very difficult. Um, isn’t...ah, isn’t English your mother tongue?)</td>
<td></td>
<td>S2 looks down and up again.</td>
<td>Audio (via Mic/speaker)</td>
</tr>
<tr>
<td>57: 59</td>
<td>S1: Um, dui, wo... wo hen xingyun, wo hen xingyun, (Um, right. I...I’m very lucky. I’m very lucky.)</td>
<td></td>
<td>T laughs</td>
<td>Visual (via web camera)</td>
</tr>
<tr>
<td>58: 11</td>
<td>um… Aren’t I?</td>
<td></td>
<td>S1 laughs</td>
<td>The Whiteboard for showing role play brief</td>
</tr>
<tr>
<td>58: 13</td>
<td>T: Dui bu dui. (Aren’t I?)</td>
<td></td>
<td></td>
<td>Annotation pen for highlighting key points on the Whiteboard</td>
</tr>
<tr>
<td>58: 15</td>
<td>S2: Shi bu shi. (Isn’t it?)</td>
<td></td>
<td>S2 looks down</td>
<td></td>
</tr>
<tr>
<td>58: 17</td>
<td>T: Oh, ‘dui bu dui’ or ‘shi bu shi’ dou keyi. (Oh, both ‘duibudui’ and ‘shibushi’ are fine.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58: 19</td>
<td>Yeah, yeah. And S1, ... ‘Is English your mother tongue’, if you say ‘Yingyu bu shi ni de muyu ma?’, that means ‘Isn’t English your mother tongue?’. The grammar is OK, but not the meaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58: 38</td>
<td>But if you say ‘Is English your mother tongue?’, how do you say it?</td>
<td></td>
<td>S2 nods</td>
<td></td>
</tr>
<tr>
<td>58: 44</td>
<td>S2: Ah... ah, Yingwen shi nide muyu ma? (Ah, ah, is English your mother tongue?)</td>
<td></td>
<td>Realization dawned on S2.</td>
<td></td>
</tr>
</tbody>
</table>

Note: occasions of focus on form are highlighted in bold.

In Table 2, focus on form occurred twice during this segment of the role play between S1 and S2. In the first instance, when the teacher noticed an error in S2’s sentence, “Isn’t English your native language”, she did not intervene until she heard S1 say “Aren’t I” in English. She then explained “Aren’t I” and “Isn’t English your native language” together to minimize the number of interruptions to the role play.

However, in this research, more focus on form was done by the teacher at the end of task completion. To ensure the smooth and continued flow of task performance, the teacher usually refrained from intervening in the process unless students requested advice from her. Instead, the teacher took notes of the grammatical points that needed to be further clarified, and discussed them immediately after the task was completed. Table 3 illustrates this process of focus on form.

In the above exchanges, the teacher did not correct the mistake made by S1 in “tamen xianzai you feichang Zhongguo cha” until the role play finished, for fear of interrupting the dialogue. Instead, she picked it up through corrective feedback upon the completion of role play.
As shown in the above examples, 3C was found to be very effective in supporting focus on form through its audio and video, Whiteboard and annotation tools. Opportunities for focus on form before, during and at the end of task performance happened as naturally and effectively as in physical face-to-face interaction. Our research indicates that the principle that instruction needs to ensure that learners also focus on form was fully realized in 3C-supported learning environment.

<table>
<thead>
<tr>
<th>Time</th>
<th>Text chat</th>
<th>Oral interaction</th>
<th>Visual interaction</th>
<th>SLMS tools used</th>
</tr>
</thead>
</table>
| 01:04:27 | S1: Yi bei kafei? Aha. Um...xianzai tamen you feichang Zhongguo cha, um, ni xiang bu xiang... um, ni xiang... Zhongguo cha ma?  
(A cup of coffee? Aha. Um...now they have very Chinese tea. Um, do you want...um, do you want...Chinese tea?) | T writes down sth  
S1 looks up  
S1 looks away from the camera and laughs  
S2 looks at the camera  
S1 looks down | Audio (via Mic/speaker)  
Visual (via web camera)  
The Whiteboard for showing role play brief.  
Annotation pen for highlighting key points on the Whiteboard | |
| 01:04:51 | S2: Dui, wo hen xihuan chi Zhongguo cha.  
(Yes. I like eating Chinese tea very much.) |  |  | |
| 01:04:58 | S1: Hao. (Ok.)  
(Oh, drink Chinese tea.) |  |  | |
| 01:04:59 | S2: Oh, he Zhongguo cha.  
(Oh, drink Chinese tea.) |  |  | |

We recommend that students and teachers should utilize the tools (e.g., the pointer, the different colour schemes, the pen or the typing function) provided by a learning system to assist focus on form. Furthermore, prepared lecture notes were found to be very effective in focus on form prior task performance.

**Principle 6: Successful instructed language learning requires extensive L2 input**

Lack of both naturalistic and instructed input is a major deficiency in traditional distance language learning. Learners’ limited exposure to the target language often comes from textbooks and taped audio and video materials. Thus, “comprehensive input” deemed essential to L2 acquisition by scholars such as Krashen (1981), has been limited. Ellis (2005:217) suggests two ways to expose students to more input:

1. Maximise use of the L2 inside the classroom, ideally by using the L2 as a means and object of instruction.
2. Create opportunities for students to receive input outside the classroom, by (a) making resources available and (b) learner-training in how to effectively use the resources.

Our data indicates that 3C can adequately support these two ways of exposing learners to more L2 input. In our cyber face-to-face sessions, using Chinese as a means and object of instruction was done similarly to that in a traditional classroom. Similar to traditional classroom teaching, listening comprehension exercise and dictation formed another kind of exposure to target language input.

Different from the traditional classroom, 3C also offers versatile tools to expose learners to more extensive L2 input. For example, the function “Joint Web Browsing” allowed the whole class to view a website together in both English and the target language, be it a text, audio or video-based web resource. Figure 7 is a screen capture of the whole class viewing a map of Australia on the web. The students and teacher discuss Australian cities in Chinese while looking at the map together.

3C was also used, in a number of ways, to create opportunities for students to receive input outside the classroom. For example, the teacher emailed the participants an audio file recorded using the online recording function inbuilt in the multimedia Discussion Forum in 3C and asked the participants to listen to the audio file and answer questions. This audio file and questions were then discussed in the ensuing cyber face-to-face session. Figure 6 illustrates the functions embedded in the Discussion Forum.
Figure 5. Session 6 – talking about cities in Australia

Figure 6. The multimedia Discussion Forum and its main features

- Audio Recording mechanism
- The attached sound file
- The Whiteboard attachment
The cyber face-to-face sessions were also recorded through 3C and the video recordings were placed in the asynchronous classroom (see Figure 7) for the students to review the sessions by themselves after class and to consolidate the input they received in class. This is a valuable source of input as language learning requires constant consolidation after class. These recordings can also assist students to catch up with the classes they have missed.

![Figure 7. The recorded sessions conducted in the cyber face-to-face classroom in 3C](image)

**Principle 7: Successful instructed language learning also requires opportunities for output**

Complementary to the principle of providing opportunities for input, providing opportunities for learner output represents another important dimension in effective L2 instruction. Central to this principle is the notion that language production itself is a process of acquisition both in terms of linguistic and pragmatic competence. However, in most traditional distance programs, opportunities for extensive output have been practically missing, as learners have been studying alone. Our research indicates that 3C could effectively provide output opportunities through videoconferencing and other data conferencing tools, such as the Whiteboard and the text chat function. It has also been confirmed in our research that effective learner output is best catered for in task-based learning. Our research placed an emphasis on task performance to ensure that students were provided with opportunities for spontaneous output. The spontaneous output contained in Table 4 is a case in point. In Session 5, after a brief focus on form, Student 1 was given four minutes for an oral presentation in Chinese about herself (see Figure 8). In her talk, she utilized the Whiteboard to present pictures of her family, friends and her dog. Upon completion of this prepared task, she was then given an opportunity to play the role of a teacher and asked her classmates to answer questions regarding the content of her presentation (see exchanges in Table 4).

We can see that the dialogue in Table 4 was spontaneous and natural. The teacher sometimes took part in the output but rarely corrected students’ grammatical errors for fear of interrupting the flow of their output. As exhibited in Table 4, even though S1 should not use ‘ま’ in ‘Shibushi ni ma’ and ‘Shibushi... airen ma’, the teacher did not
correct her. The fact that the students could see and talk to each other through videoconferencing helped to create a communicative atmosphere for output. Opportunities for output such as the one presented in Table 4 were provided in every cyber face-to-face session.

**Figure 8.** Student 1’s Oral presentation

**Table 4.** Session 5 – question and answer session with S1

<table>
<thead>
<tr>
<th>Time</th>
<th>Text chat</th>
<th>Oral interaction</th>
<th>Visual interaction</th>
<th>SLMS tools used</th>
</tr>
</thead>
<tbody>
<tr>
<td>01:51:48</td>
<td>S1: Di san ge, shui shi… Sugelan ren? (No.3, who is…from Scotland?)</td>
<td></td>
<td>S1 looks down and up</td>
<td>Audio (via Mic/speaker)</td>
</tr>
<tr>
<td>01:51:50</td>
<td>S2: Shui shi Sugelan ren? Dui bu qi, wo ting bu dong. (Who is from Scotland? Sorry, I don’t understand.)</td>
<td></td>
<td>S2 knitted her eyebrows and looks puzzled.</td>
<td>Visual (via web camera)</td>
</tr>
<tr>
<td>01:51:56</td>
<td>S2: Ah, ha, um, zhe shi…um ni de baba. (Ah, ha, um, this is… your father.)</td>
<td></td>
<td>S2 realizes and laughs.</td>
<td></td>
</tr>
<tr>
<td>01:52:05</td>
<td>S1: Ah, bu dui. (Ah, no.)</td>
<td></td>
<td>S1 laughs</td>
<td></td>
</tr>
<tr>
<td>01:52:13</td>
<td>S2: Mama, mama, mama, ni de mama. (Mother, mother, mother, your mother.)</td>
<td></td>
<td>S2 rolls her eyes</td>
<td></td>
</tr>
<tr>
<td>01:52:15</td>
<td>S1: Wo mama shi Aodaliya ren. Wo baba shi Helan ren. (My mum is Australian. My father is from Holland.)</td>
<td></td>
<td>S2 laughs and sits back.</td>
<td></td>
</tr>
<tr>
<td>01:52:21</td>
<td></td>
<td></td>
<td>T laughs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S1 tilts her head to the left and smiles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S2 puts her hands on the back of her head.</td>
<td></td>
</tr>
</tbody>
</table>
Ah, Helan ren. Wo zhidao. Wo zhidao ni de mama Aodaliya ren. Wo tingjian le. (Ah, Dutch. I know. I know your mother is Australian. I heard that.)

Shi bu shi ni ma? (Is that you?)

Bu shi. (No.)

Shi bu shi… airen ma? (Is it husband?)

Ah, hen hao, dui! (Very good, right.)

S2: Dui, wo hen xihuan chi Zhongguo cha. (Yes. I like eating Chinese tea very much.)

S1: Hao. (Ok.)

S2: Oh, he Zhongguo cha. (Oh, drink Chinese tea.)

S3: Ni yao chi shenme? (What do you want to eat?)

S2: S2, wo xiang jintian wo bu chi dongxi, wo tai pang. (S2, I don’t think I will eat anything today. I am too fat)

S1: S2, wo xiang jintian wo bu chi dongxi, wo tai pang. (S2, I don’t think I will eat anything today. I am too fat)

S2: Yibe kafei, hai you yibe… Zhongguo cha. (One cup of coffee, and one cup of Chinese tea.)

S3: Zhongguo cha, yige Zhongguo cha, yige kafei? Zhe shi um…liang, liangkuai um…Meiguo de yuan. (Chinese tea, one Chinese tea. One coffee? This is um…two, two dollars…American dollars.)

T: Haha, Meiyuan. (Haha, Meiyuan.)

Principle 8: The opportunity to interact in the L2 is central to developing L2 proficiency

The importance of interaction to L2 acquisition has long been established. Theorists often cite Long’s (1981, 1983) Interaction Hypothesis to summarize the current understanding of interaction in L2 acquisition. When discussing Interaction Hypothesis, Long and Robinson (1998: 22) emphasize that “[p]articularly important is the negotiation for meaning that occurs more or less predictably in certain interactions”. They continue that negotiation for meaning elicits interactional modifications, negative feedback, including recasts and noticing that “increase input comprehensibility without denying learners’ access to unknown L2 vocabulary and grammatical forms”. However, due to the lack of effective technology to bridge the distance between the learner and education provider, distance language learners have been deprived of synchronous oral and visual interaction until very recently. With the rapid developments and improvements in SLMSs, such as 3C, the provision of interaction similar to that of physical face-to-face interaction has become a reality. Our data indicates that 3C provides various options to create opportunities for learners to interact in the target language. Through a web camera, the students can interact with one another and with their teacher(s) both orally and visually. Table 5 presents an example of the kind of interaction facilitated by 3C.

<table>
<thead>
<tr>
<th>Time</th>
<th>Text chat</th>
<th>Oral interaction</th>
<th>Visual interaction</th>
<th>SLMS tools used</th>
</tr>
</thead>
<tbody>
<tr>
<td>01:04:51</td>
<td>S2: Dui, wo hen xihuan chi Zhongguo cha. (Yes. I like eating Chinese tea very much.)</td>
<td></td>
<td>T takes notes</td>
<td>Audio (via Mic/speaker)</td>
</tr>
<tr>
<td>01:04:58</td>
<td>S1: Hao. (Ok.)</td>
<td></td>
<td>S3 smiles</td>
<td>Visual (via web camera)</td>
</tr>
<tr>
<td>01:04:59</td>
<td>S2: Oh, he Zhongguo cha. (Oh, drink Chinese tea.)</td>
<td></td>
<td>T laughs.</td>
<td></td>
</tr>
<tr>
<td>01:05:22</td>
<td>S3: Ni yao chi shenme? (What do you want to eat?)</td>
<td></td>
<td>All laugh</td>
<td></td>
</tr>
<tr>
<td>01:05:36</td>
<td>S1: S2, wo xiang jintian wo bu chi dongxi, wo tai pang. (S2, I don’t think I will eat anything today. I am too fat)</td>
<td></td>
<td>S3 puts his fingers on his temples.</td>
<td></td>
</tr>
<tr>
<td>01:06:18</td>
<td>S2: Yibe kafei, hai you yibe… Zhongguo cha. (One cup of coffee, and one cup of Chinese tea.)</td>
<td></td>
<td>T looks down and</td>
<td></td>
</tr>
<tr>
<td>01:06:26</td>
<td>S3: Zhongguo cha, yige Zhongguo cha, yige kafei? Zhe shi um…liang, liangkuai um…Meiguo de yuan. (Chinese tea, one Chinese tea. One coffee? This is um…two, two dollars...American dollars.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:06:48</td>
<td>T: Haha, Meiyuan.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Dialogue</td>
<td>Notes/Actions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:06:52</td>
<td>(Haha, US dollars.) S3: Meiyuan. (US dollars.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:06:54</td>
<td>S2: S1, wo jintian mei qian, meiyou, mei dai qian. (I haven’t brought any money with me today. ...no, haven’t got any money.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:07:04</td>
<td>S1: Duibuqi, qing ni zai shuo yibian? (Sorry, could you please say it again?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:07:06</td>
<td>S2: Wo mei dai qian. (I didn’t bring any money.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:07:12</td>
<td>S1: Oh …</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:07:13</td>
<td>S3: Meiyou qian ma? (You don’t have any money?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:07:14</td>
<td>S2: Ah, wo neng xiwan. (Ah, I can wash dishes.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:00</td>
<td>S3: Shenme? (What?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:05</td>
<td>S2: Xiwan. (Wash dishes.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:06</td>
<td>S3: Xiwan? (Wash dishes?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:08</td>
<td>S2: Wo mei dai qian. (I didn’t bring any money.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:10</td>
<td>...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:12</td>
<td>S3: She can wash dishes, haha… ah…haha…Hao le, hao le. (Ok, Ok.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:09:14</td>
<td>writes some notes, S3 smiles</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The task depicted in Table 5 only requires that a dialogue be created between three students role-playing a scene in a cafe. No specific details of the dialogue were stipulated by the teacher. Instead the students had to create the dialogue spontaneously as the scene developed. After ordering the coffee and tea, S2 says to the waiter (S3) that she has not got any money on her and offers to wash dishes to pay for the drinks. Interactional modification occurred when S2 realizes that she should have said ‘drinking Chinese tea’, instead of ‘eating Chinese tea’. S3 also modifies his Chinese term for US dollars after receiving the correction from the teacher. Recast also happened in the dialogue when S2 repeats what she has said at S1’s request. S1 finally realizes that S2 has said she did not have any money on her. Negotiation of meaning occurred again when S2 offers to wash dishes. S3 finally notices the link between washing dishes and having no money. This process of negotiation of meaning was also supplemented by visual interaction demonstrated through the video (see Column 4 in Table 5). For example, to emphasize that she has not got any money on her, S2 also shakes her head.

**Discussions and recommendations**

Data from this research indicates that an effective SLMS, such as 3C, can support communicative and interactive L2 learning. This section further discusses the above presented results and makes recommendations in terms of the use of the following three tools in an SLMS, which are particularly important to language learning:

- **Text chat,**
- **Joint Web Browsing,**
- **Sub cyber face-to-face classrooms**
Text Chat

If used effectively, text chat can cater for interaction in many important ways. It can be used to supplement and complement the audio and video when the audio and video quality becomes problematic. More importantly, the different kinds of interaction facilitated by text, audio and video channels cater for students of different learning styles and language proficiency. For example, the shy students can participate in learning by typing their answers or comments in the text chat box while listening to others’ verbal exchanges. The major points of a verbal exchange can also be summarized here by the teacher or an advanced student for reviewing what has been said orally. Furthermore, teachers can maximize the opportunity to better facilitate individual learning through text chat, answering specific questions raised by individual students while other students are performing a task orally. One might argue that using text chat concurrently with oral and visual interaction might create information overload for some students and teachers. However, today’s digital generation has been accustomed to receiving information from multiple sources simultaneously.

No doubt, a class protocol needs to be established to regulate the use of the text-chat function. For example, text chat should not be used for chatting about things irrelevant to the content of the particular session. In particular, no swear words should be posted there. For an advanced class, students can be asked to text chat only in the target language. To be more effective, certain icons can be created and used for indicating actions. For example, in our research, “papapapa” stands for applauds and the longer it gets, the warmer the applause it would indicate. A series of question marks (i.e., ?????) means “I have a question”.

Joint Web Browsing

Joint Web Browsing was found to be a valuable tool as it provides wider ranging and more authentic input than a traditional classroom can. It allows instant access to voluminous web resources in the target language. For example, the teacher and the learner can browse a website for teaching Chinese and use the audio files on the website (e.g., MP3 files) as a listening comprehension exercise. Or the whole class can watch authentic video segments on Youtube, and use it as a catalyst for discussions in the target language.

Sub cyber face-to-face classrooms

Ellis (2005: 220) believes that passing control of the discourse topic to the learner ensures interaction beneficial to acquisition, and that small group work is where “acquisition-rich discourse is more likely to ensue”. Our data indicates that small group activities were also effectively facilitated by the sub cyber face-to-face classrooms. For example, in Lesson 4, the students were divided into groups and sent to the sub cyber classrooms to collaborate in a conversation in Chinese. It is recommended that this function should only be used when students have grown familiar with the learning system. This is because they would have to leave the main cyber classroom and operate the sub classrooms all by themselves. It was found that the ideal number of groups was between 2 and 5. This allowed the teacher enough time to visit each sub classroom while learners are practising in their groups. These classrooms can also be used to provide opportunities for interaction after class as they can be set up by learners themselves at anytime. The learner can accomplish a specific task with one or a group of fellow students in these classrooms, and record their task performance for the teacher or other students to view.

Conclusion

This study has tested some of the principles of instructed language learning in a cyber face-to-face environment supported by 3C. Although largely descriptive and qualitative in nature, this study has depicted the dynamics of this environment and explored its pedagogical values for distance language learning. The results of this research indicate that the present generation SLMSs can adequately support the realization of those principles gleaned by Ellis (2005). However, this conclusion does not mean that these principles are readily applicable in a cyber face-to-face environment. Nor does it mean that the application of these principles replicates what happens in a traditional classroom. On the contrary, the process in which those principles were applied was pedagogically different in many significant ways between the two environments. Hampel (2006: 111) claims that “an easy (and cheap) transposition
of face-to-face tasks to a virtual environment is not possible; instead, we have to ensure that tasks are appropriate to
the medium used and that we develop tasks that take into account the affordances (i.e., the constraints and
possibilities for making meaning) of the modes available”. The versatile tools in 3C created an acquisition-rich
environment in which synchronous text, oral and visual interaction happened spontaneously, and complemented one
another. Comprehensive input and output with distinctive characteristics of cyber face-to-face learning were
adequately facilitated.

This research points to the great potential of an advanced SLMS for distance language education. The multiplicity of
such an environment needs to be further explored. The technologies are in place and will certainly improve as time
goes on. How we use them to effectively and creatively support L2 learning depends on the teacher’s and the
learner’s familiarity with the tools and their intuition in language teaching and learning, in addition to being guided
by established principles.

While testing established principles of language learning, this research also recognizes a need for the formation of
new principles addressing the characteristics of online learning. Such principles can include:

- instruction needs to ensure the use of various online tools to maximize opportunities for learners to interact
  spontaneously in the target language;
- successful instruction needs familiarity with the affordance of an online environment;
- instruction needs to ensure that teachers and learners develop technical skills/competency for using online
  learning tools effectively and creatively.

Further studies are urgently needed to formulate and test principles of synchronous online L2 learning. At the same
time, we argue that, in addressing the uniqueness of online learning, research into SLMS-supported learning needs to
be grounded on the established principles of language learning. No matter how advanced a technology is, it is still a
tool to support learning. In an emerging area of research such as SLMS, it is important to avoid throwing out the
baby with the bathwater.

Acknowledgement

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