



**AN INVESTIGATION OF SYNCHRONOUS ONLINE  
COMMUNICATION AND TASK-BASED LEARNING IN THE EFL  
CLASSROOM**

**A THESIS SUBMITTED BY ANTHONY YOUNG, MEd, BA  
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## ABSTRACT

The aim of this study was to gauge the capability of two synchronous computer-mediated communication modes (text chat and voice chat) to promote second language (L2) uptake in an English as a foreign language (EFL) classroom setting. Both communication modes are different from face-to-face (f2f) communication with features that have the potential to promote better learning outcomes in certain conditions. Three distinct tasks were designed using task-based language teaching (TBLT) as a framework to measure the effectiveness of each mode (text chat; voice chat; f2f) to facilitate both immediate and delayed uptake. Participants in the study were mostly first year Japanese university students, enrolled in required English conversation classes (Semester 1; Semester 2) that were split into six separate classes. The study investigated: (1) the extent to which task design and communication mode affected uptake; (2) how much time allowances played a role; and (3) the degree that task perceptions differed depending on communication mode. The effectiveness of the three modes and tasks was measured using a series of pre-tests and post-tests. Post-questionnaires and interviews were also conducted to gain insight into the task design perceptions of participants who interacted in either of the SCMC modes or f2f. This investigation revealed both similarities and differences in the way SCMC and f2f communication affected learner uptake and demonstrated that certain elements of task design, such as input type, time allowances, and goal orientation, can play a role in how successful text chat and voice chat is at promoting uptake, compared to f2f interaction

## CERTIFICATION OF THESIS

The work submitted in this thesis is original, except as acknowledged in the text. The material herein has not been submitted, either in whole or in part, for any other award at this or any other university except where acknowledged.

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## **ABBREVIATIONS**

CALL	Computer-Assisted Language Learning
CMC	Computer-Mediated Communication
EFL	English as a Foreign Language
ESL	English as a Second Language
F2F	Face-to-Face
L1	First Language
L2	Second Language
SLA	Second Language Acquisition
SCMC	Synchronous Computer-Mediated Communication
TBLT	Task-Based Language Teaching

# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND TO THE RESEARCH

Language learning is a social endeavour that necessitates opportunities for individuals to engage each other in meaningful exchanges. Interaction is the driving force behind cognitive and linguistic development in second language (L2) learning (García Mayo & Alcón Soler, 2013; Loewen & Sato, 2018; Long, 1996; Mackey, 2007; Mackey & Goo, 2007). Yet, creating the right conditions for meaningful learner interactions in English as a foreign language (EFL) learning contexts can prove challenging for teachers. Classes typically consist of large numbers of learners who mostly speak the same L1 and exposure to English is often limited to the confines of the classroom. Consequently, it is challenging for teachers to promote a sense of purpose and authenticity in their students' L2 conversations and EFL learners cannot be faulted for thinking of English as being a test-based subject like any other at school rather than a legitimate means of communication. Under such restrictive conditions, the motivation of learners who want to interact in English, especially for extended periods of time, can be absent.

Task-based language teaching (TBLT) is an approach to facilitate purposeful student-centred interactions in EFL classroom settings, particularly for teenagers and above. Motivated by earlier communicative methods of teaching (Curran, 1972; Moskowitz, 1977), TBLT draws on the premise that acquisition takes place when learners actively engage each other in task-based communication. Such communication compels

learners to construct meaning through their own experiences and problem solving goals (Larsen-Freeman & Anderson, 2011). Primarily viewing learners as independent agents, the objective of TBLT is to foster the learner's own innate capacity to learn the language implicitly within the confines of the L2 classroom (Krashen & Terrell, 1983). This teaching approach is well suited to EFL learning contexts (Ahmad & Mahmood, 2010; Huong Thi, Son & Thi Nguyen, 2021; Page & Mede, 2018; Thanh & Huan, 2012; Van de Guchte, Braaksma, Rijlaarsdam, & Bimmel, 2016).

At the same time, advances in digital technologies today allow synchronous computer-mediated communication (SCMC) to conceivably promote more L2 learning opportunities both inside and outside the classroom. Adequately supported by the tenets of TBLT, SCMC has the potential to lessen learners' anxiety levels, as well as raise their motivation to take risks and be creative in their interactions with others (Gonzalez-Lloret, 2017). Lai and Li (2011) assert that SCMC technology has the capacity to enhance noticing, self-monitoring, and equal participation. The benefits of such technology for distance education are evident (see White, 2017, for further reading). However, in the EFL classroom, where proximity to one's classmates is not an issue, it remains unclear whether there is any potential advantage to communicating online.

As most communication is carried out online at present, CMC research (e.g., Hampel & Stickler, 2012; Yanguas, 2010) requires us to understand the potential of such technology and how it benefits learner communication and language learning. CMC studies often incorporate the TBLT framework (e.g., Baralt, 2013; Blake, 2000; Guo & Möllering, 2016; Satar, & Özdener, 2008; Zeng, 2017) as an effective way to



measure the potential of technological innovations for language learning purposes (Gonzalez-Lloret, 2017). A review of computer-assisted language learning (CALL) literature has shown that more research on task-based learning is needed (Chapelle, 2014; Kim, 2017; Li & Lewis, 2018; Smith, 2017). Smith (2017) asserts that the most relevant CALL studies are those that critically assess the capacity of specific tools or apps to promote L2 learning. Where technology-mediated TBLT is concerned, it is necessary to evaluate the suitability of tasks and the rationale for using them in various settings (Chapelle, 2014). In EFL classroom contexts, more studies are needed to learn how SCMC may affect learning differently from face-to-face (f2f) communication (Kim, 2017), and other SCMC modes (Li & Lewis, 2018).

This study addressed the need to compare f2f communication with two SCMC modes: text chat and voice chat. It evaluated the potential impact each mode can have on task-based learning opportunities in EFL classroom settings. The text chat and voice chat modes were selected for their accessibility online, as well as their features that distinguish them from f2f communication. Three task designs were used in this investigation: an opinion exchange, a dictogloss, and a problem solving task. These three task types were employed to gauge how various task-mode combinations can affect L2 learning opportunities differently.

## **1.2 RESEARCH AIMS AND QUESTIONS**

Despite SCMC having the potential to assist L2 language learning, there continues to be a lack of research in the field (Kim, 2017; Li & Lewis, 2018; Smith, 2017). The aim of this study was to measure the effectiveness of the two SCMC modes (i.e., text chat and voice chat) to promote new L2 uptake through task-based learning. The study

was built on current theories, approaches and notions related to second language acquisition (SLA) in the context of EFL teaching, including the Constructionist theory; the Interactionist approach; the TBLT approach, and learning through CMC. The intention of this study was to offer new insight into the relationship between task design, mode, and learner, and how classroom-based TBLT can be either facilitated or impeded by SCMC technology. In particular, this meant comparing text chat and voice chat with f2f communication under the same classroom conditions.

The study attempted to answer the following research questions: (1) To what extent can uptake of new L2 input be affected by task design and communication mode?; (2) To what extent do time allowances play a role?; (3) To what extent do learner perceptions of tasks differ depending on the communication mode they use? The first question was answered by comparing the participants' pre-test and post-test results to determine if there were any task-mode patterns in uptake of the targeted lexical items. To answer the second question, questionnaire data was compared with the post-test results to ascertain the extent to which time constraints affected opportunities for the participants to notice the targeted vocabulary and phrases. The third question was answered by identifying similarities and differences in the participants' post-questionnaire feedback and how communication mode may have influenced their perceptions of task design, as well as their capacity to notice the targeted language items. The purpose of this study was to demonstrate how task-based learning through text chat, voice chat, and f2f communication could be both similar and different. In doing so, a clearer perspective on how SCMC can facilitate language learning in the EFL classroom was achieved, providing greater insight into how teachers globally may better incorporate this technology in their own teaching contexts.

### 1.3 TERMS AND DEFINITIONS

For the purpose of the study, the following definitions are used:

- Computer-assisted language learning (CALL): A field of research that illustrates how computer applications can be used to promote language learning.
- Computer-mediated communication (CMC): The use of networked computer systems to transfer, store, and retrieve information to facilitate communication between individuals or groups (Berge & Collins, 1995). CMC can be classified as being either synchronous or asynchronous, depending on the degree of time delay between the messages of two interlocutors. Yilmaz and Granena (2010) state that, “The synchronous mode (e.g., instant messaging, Internet relay chat) occurs in real time, whereas the asynchronous mode (e.g., emails, discussion boards) does not” (p. 21).
- Dictogloss: It is described by Ellis (2003) as “a procedure that requires learners to reconstruct a short text after listening to it twice. The text is specifically designed to focus attention on a specific grammatical feature so it constitutes a type of focused task” (p. 341).
- English as a foreign language (EFL): English is learned in environments where the language of the community and the school is not English (Gunderson, 2008).
- English as a second language (ESL): English is the language of the community and the school that the students learn it in (Gunderson, 2008).
- First language (L1): This is an individual’s mother tongue.

- Focus-on-form: This is a teaching approach that overtly draws a learner's attention to linguistic elements as they arise incidentally during a lesson that has an overriding focus on meaning or communication (Long, 1991).
- Second language (L2): This is an individual's second language.
- Second language acquisition (SLA): This is a term for the social and psychological processes underlying the development of a second language and subsequent languages (Nunan, 2004).
- Synchronous computer-mediated communication (SCMC): This is technology that facilitates live communication through networked computers.
- Targeted language: This is the language taught to learners during a lesson.
- Task-based language teaching (TBLT): This is an approach to language teaching organised around tasks rather than language structures (Nunan, 2004).
- Text chat: This is a synchronous text-based communication mode that works through a networked computer system.
- Voice chat: This is a synchronous verbal communication mode (no camera) that works through a networked computer system.
- Video chat: This is a synchronous verbal communication mode (with camera) that works through a networked computer system.
- Uptake: This is a term that refers to new information learners can recall after having participated in a lesson (Allwright, 1984, as cited in Ellis, 2003).

#### **1.4 STRUCTURE OF THE THESIS**

Chapter 1 explains the rationale of this study. The rationale is based on the challenges that face EFL teachers and the potential for TBLT and SCMC technology to improve L2 learning in such contexts. The chapter states the objectives and research questions

that form the basis of the study. It provides definitions for key terms and acronyms relevant to the fields of TBLT and CALL. It also presents the structure of this thesis.

Chapter 2 offers an overview of literature relevant to second language acquisition (SLA), task-based language teaching (TBLT), and computer-assisted language learning (CALL). It first examines environmental and biological factors related to EFL learning, particularly cognitive-interactionist theories and notions associated with the TBLT approach. The factors include: striking a balance between implicit and explicit learning in focus-on-form instruction (Long, 1991); finding ways to have learners notice form on their own (Schmidt, 1990); and understanding the limited attention capacity of learners to attend to issues of meaning and form (Skehan, 1998). The chapter then details the TBLT approach, the difference between real world and pedagogical tasks, criteria for task design, and how various features and procedures have the potential to affect learning opportunities. After that, CALL research is discussed, including how SCMC can use TBLT as an instructional framework, and the ways that SCMC modes affect learner interactions differently from f2f communication.

Chapter 3 describes the methodology of the study. It first outlines the research design, detailing the mixed methods approach used for the collection and analysis of data. Each data collection method is then overviewed. These include a series of pre-tests and post-tests, pre-questionnaires and post-questionnaires, and interviews. The methods of data analysis and triangulation of the results are then explained. Ethical considerations are also addressed, such as the power relationship between student and teacher, and other issues related to carrying out research in a classroom environment.

The results of the study are presented in Chapter 4. The quantitative and qualitative data from six groups (2 face-to-face groups; 2 text chat groups; 2 voice chat groups) involved in two sub-studies (Sub-Study 1 and Sub-Study 2) is presented. The results of the pre-tests, post-tests, pre-questionnaires, post-questionnaires, and feedback from the interviews are triangulated to present a clear picture as to how the participants from each group perceived their task-based learning experiences using the different communication modes and the effect this experience had on their capacity to recall the target language. The quantitative and qualitative results from the SCMC groups (text chat and voice chat) and the f2f groups are then compared in order to identify any underlying commonalities or differences between the groups regarding the effects each task and mode had on opportunities for learning.

The results of the study are then discussed in Chapter 5 in correspondence to the research questions. This discussion relates to: the potential of task design and communication mode to facilitate different learning outcomes; the extent to which classroom restrictions, like time constraints, play a role; and the impact each communication mode has on the participants' perceptions of the different tasks. The communication modes are then evaluated regarding their suitability to the EFL classroom in relation to each task design. Chapter 6 then reiterates the major conclusions found in the study in relation to: the perceived effectiveness of text chat and voice chat to facilitate language learning; the demonstrated effectiveness of using each SCMC mode to carry out TBLT in the EFL classroom; and the learners' willingness to embrace online communication as a part of their L2 learning experience. Finally, based on these conclusions, implications for EFL teachers are stated and

recommendations for further research into SCMC for task-based learning in classroom settings are made.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 OVERVIEW**

This chapter begins by examining the similarities and differences of first and second language acquisition and the situation of EFL learners. It goes on to explain how the cognitive-interactionist theory of language acquisition comprises both internal and external factors, and how these factors influence the learning process. Next, a review of the specific features and conditions that form the foundation of the TBLT framework is provided. These features and conditions include the need for: L2 input to be comprehensible; opportunities for noticing and output to take place; interaction to be meaning-focused; and the attention capacity of learners to be considered. They are provided in a chronological order to clarify when and why advocacy for them started, as well as how they are interrelated to one another. The TBLT framework itself is then outlined. A criterion for task design is provided, and variables that may have a positive or negative impact on learning outcomes are discussed.

This chapter then explores CMC research in the field of CALL. It explains why there is a growing interest in technology and how it can possibly be integrated into L2 learning. It also shows how the TBLT framework is used to ascertain the effectiveness of CMC modes in relation to noticing new language, promoting increased meaning negotiation, and the production of modified output. After that, the chapter argues that there is a need for more comparative synchronous CMC studies to be carried out in classroom environments. The purpose of this is to ascertain how synchronous task-based learner interactions online may enhance or impede learning objectives more so than f2f exchanges. The challenges researchers face in collecting classroom data are



also outlined and a case is made as to why a mixed methods approach would be the most effective in carrying out such investigations. Finally, a review of recent comparative SCMC studies is provided, the unique modal effects of text chat and voice chat are discussed, and the theoretical framework of this study is presented.

## **2.2 THE CHALLENGE OF LEARNING ENGLISH AS A FOREIGN LANGUAGE**

Unlike language learning, which is an active mental process, language acquisition occurs implicitly on a subconscious level (Krashen, 1988; Long, 2013). When children acquire their first language, they are unaware that it is happening as it involves virtually no effort, and only minimal cognitive resources to process the language (Leow & Zamora, 2017). To achieve fluency by age 6 or 7, children need to be exposed to vast amounts of input to develop implicit knowledge of that language (Loewen, 2020). The process also includes continual opportunities for practice (DeKeyser, 2007). For many EFL learners, however, maintaining that level of intensity over an extended period of time is not possible. Most times, they are unable to commit 5 or 6 years of their lives to immersing themselves in a new L2. Limited to studying in their native country, opportunities to practice English in the classroom are also inadequate, often times lacking regularity and being artificial in nature.

Maturational constraints also appear to limit the capacity of most EFL learners to achieve native level acquisition. Over time, their innate aptitude to implicitly pick up language knowledge diminishes (DeKeyser, 2006; DeKeyser & Larson-Hall, 2005; Long, 2013). Carrying out speaking acts in the L2 requires substantially more cognitive effort on the part of an EFL speaker than they need when conversing in their

native tongue. Somewhat counterintuitively, the better someone masters their L1 before learning a new L2, the more of a hinderance the implicit knowledge of the first language can become. Cutler (2001) describes monolingual adults as being partially disabled language learners, since both their entrenched L1 processing habits and age-related decline weaken their capacity for implicit learning (i.e., their ability to subconsciously acquire knowledge through random episodes of exposure to the L2).

However, despite the significant hurdles that EFL learners face, the default mode of SLA remains fundamentally implicit (Long, 2015). When older L2 learners perform complex tasks without extensive or targeted practice, they are still able to master new variables successfully, albeit more slowly than younger L2 learners (Doughty, 2003). As with children, improvement in adult performance precedes their capacity to verbalize how they do it. Doughty (2003) argues that, even when studying a second language, implicit acquisition, and not explicit learning, is the default mode for development. In order for EFL learners to become proficient speakers of the language, implicit understanding of how to use the L2 is necessary.

Although it is feasible that EFL learners could still learn an L2 to some extent in a purely incidental fashion, it is too time consuming. As Long (2015) contends, the whole process would take much longer than teachers and learners generally have at their disposal and still would not result in native-like fluency. For EFL learners, particularly in classroom contexts, it is more effective to provide them with opportunities to engage in a combination of both incidental and planned form-focused learning, in order to stimulate the process of SLA. While incidental learning may promote better opportunities for learners to proceduralize knowledge about form,

planned learning can help them also develop their explicit knowledge of the language by making difficult forms more salient (Loewen, 2020). In accordance with the weak interface position, Ellis (2007) argues that L2 learners can take that explicit knowledge and use it to monitor their own L2 production, and to notice those same explicitly taught forms in other input. As a result, the language awareness of EFL learners can be heightened so they develop their language skills more effectively than what would be possible under purely incidental circumstances. Therefore, understanding how instruction can be used to effectively heighten language awareness is an essential part of SLA research, including the present study.

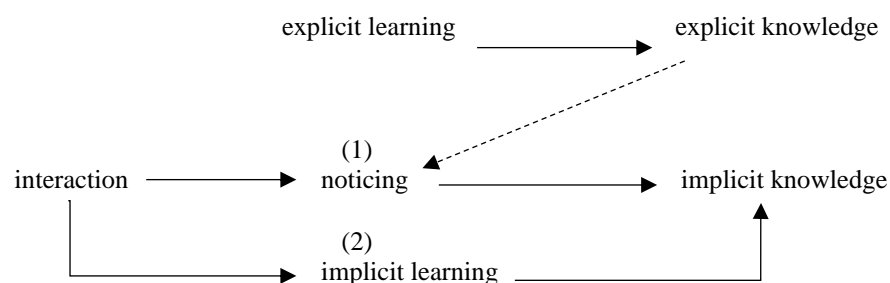
### **2.3 COGNITION AND INTERACTION: STRIKING THE RIGHT BALANCE FOR L2 LEARNING**

Generally, language learning theories take one of two positions: that learning occurs naturally, or that it has to be nurtured (Crain & Thornton, 2014). The natural position posits that all learners come to each situation with an innate capacity to learn language (Gass, 2003). Acting as a simple trigger to set language-specific parameters, the learner's mere exposure to input is seen as sufficient to allow acquisition to take place. On the other hand, the nurture position argues that language learning occurs through interaction and that it is conditioned by environmental factors. Rather than learners merely being passively exposed to input, learners require opportunities to actively engage with the input, to allow them time to form language-related representations in the brain.

Cognitive-interactionism had a key role in the theoretical framework of this study. It concerns itself with the internal cognitive mechanics of human interaction and the

effects that it has on individual learners. Drawing on contributions from both nature and nurture perspectives, SLA cognitive-interactionist theories focus on the cognitive processes within each L2 learner, such as their attention and perception, and how both can act as mediators between interaction and acquisition (Gu, 2018). These theories emphasize factors that affect L2 development, which relate to each other, are mutually dependent on one another, or can cancel each other out (Gleason, 2005). The communicative pressures placed on learners as they engage each other in an L2 is seen to promote language learning because “the conversational interaction provides learners with an acquisition-rich environment where they have access to comprehensible input, output opportunities, and interactional feedback” (Egi, 2004, as cited in Gu, 2018, p. 8). Although implicit learning is regarded as the default mode of learning, to compensate for the reduced capacity of older learners to acquire an L2, explicit knowledge gained from intentional learning can help serve as an activator for noticing to facilitate development of implicit knowledge (Ellis et al., 2020). The teaching method employed in this study is modelled off a cognitive-interactionist approach which sees L2 learning as a dynamic process which involves both implicit and explicit instruction (see Figure 2.1). Cognitive knowledge of the L2 is thought to be first learned through interaction, then over time, integrated slowly into the learner’s interlanguage where it can then be automatized for speaking and understanding purposes.

Figure 2.1  
*Cognitive-Interactionist Model*



*Note.* From “Task-Based Language Teaching: Theory and Practice,” by R. Ellis et al., 2020, p. 31. (<https://doi.org/10.1017/9781108643689>). Copyright 2020 by Cambridge University Press.

There is extensive evidence that interaction promotes SLA (Lyster & Saito, 2010; Plonsky & Gass, 2011), particularly when negotiation is involved (Keck et al., 2006; Mackey & Goo, 2007). The main goal for cognitive-interactionist research is to understand how an L2 learner’s innate capacity for learning interacts with the environment and lesson input to create implicit linguistic knowledge (Gass, 1997). Learning opportunities are seen to depend on the learner’s cognitive capacity that results from input, interaction, noticing, and output (Althobaiti, 2014). Cognitive-interactionist research endeavours to demonstrate how acquisition is achieved by investigating the types of L2 input learners receive, the different types of interactions they engage in, and the types of output they produce (Gass & Mackey, 2007). As Kim (2017) states, cognitive-interactionist teaching approaches have used research findings to advocate for certain conditions considered optimal for L2 instruction. One of these conditions involves the learner’s exposure to certain types of input, which was of interest to the current research project.

### **2.3.1 PROVIDING EFL LEARNERS WITH COMPREHENSIBLE INPUT**

The input hypothesis (Krashen, 1985) asserts that the dominant driving force behind L2 learning is the learner’s prolonged exposure to input that is only slightly beyond his or her current level of understanding. In accordance with Chomsky’s (1981) notion of Universal Grammar, acquisition is believed to be the automatic internalization of new linguistic forms and meanings carried out through natural subconscious processes.

As part of the SLA theory, Krashen (1982) maintains that, “we acquire by understanding language that contains structure a bit beyond our current level of competence (i + 1) ... done with the help of context or extra-linguistic information” (p. 21). For the present study, two features of the input hypothesis were considered when factoring in the type of text that would be suitable for lesson plans. First, if it was too complex, it would not be useful in developing EFL learners’ implicit knowledge of the language. In addition, for the learners to be receptive to the input, their affective filter would need to be low at the time of exposure; meaning they would have to be in a calm and relatively receptive state of mind.

To make input comprehensible, Krashen (1982, 1994) recommends a number of different strategies. One is to have teachers employ simplified registers. That is, to modify the way they speak to learners in order to be more easily understood. Another strategy is to provide learners with texts or listening materials that incorporate language they are largely familiar with. By doing so, learners have more opportunities to grasp the meaning of unfamiliar forms and lexical items by discovering them in linguistic contexts that they have the capacity to comprehend.

The teaching approach used in the study was based on the notion that EFL teachers must provide their learners with an environment that maximizes their exposure to English and allows them opportunities to frequently come in contact with the language in communicative contexts. Although it is not possible to make adjustments to learning materials so that they are suitable to the proficiency level of all learners all the time, EFL teachers can ensure that their students are able to receive a sizable amount of comprehensible messages. By casting a wide net, at the very least, the learners are

guaranteed to receive some exposure to the language that can benefit their L2 development. Such intensive contact with the language provides learners with opportunities to implicitly pick up new L2 knowledge when they are ready for it, and not when a teacher expects them to do so. For Krashen and other supporters of nativist approaches to communicative language teaching, conscious learning is considered irrelevant, with SLA being argued to be an entirely subconscious process whereby learners do not consciously focus on or attend to the input they acquire (Lowen, 2020).

The input hypothesis highlights the need to provide learners with a greater variety of language materials than what is normally offered in traditional grammar-focused textbooks. It also emphasizes the need for EFL teachers to recognize individual learner differences, and that they cannot all be expected to develop at the same pace. Finally, the hypothesis asserts that exposure to authentic language input is much more effective than providing overtly simplified (or overtly complex) classroom-texts. Conversely though, the input hypothesis is limited in that it presents acquisition as being a purely passive individual process. It does not address the differences between L1 and L2 acquisition and lacks validity in its disregard for the role that interaction plays. Nevertheless, understanding how input affects opportunities for learners to notice new language was important in the construction of the current research project's objectives.

### **2.3.2 THE IMPORTANCE OF INTERACTION IN EFL LEARNING CONTEXTS**

EFL learning is most effective when students actively engage one another in communication. In accordance with Long (1983), the teaching approach of this study was based on the notion that receiving comprehensible input, while necessary, is no

more important than other factors such as the promotion of interaction and learner output. Many studies (e.g., García-Mayo & Alcón-Soler, 2013; Loewen & Sato, 2018; Long, 1996; Mackey, 2006; Mackey & Goo, 2007) support the concept that interaction acts as a catalyst for L2 acquisition. In the original version of the interaction hypothesis (Long, 1981), the rationale for input closely aligned with that of Krashen's input hypothesis. The intended purpose of interaction was argued to promote meaning negotiation through communication breakdowns, so that learners had opportunities to receive comprehensible input. Long (1983) contended that negotiating communication breakdowns led to modifications in the interactional structure of conversations that could result in input becoming more comprehensible to learners by giving them more opportunities to process problematic linguistic forms. In accordance with Krashen's SLA theory, Long (1985) also posited that the one-size-fits-all grammar textbook design is inappropriate for use in classroom settings, stating that "there is no reason to assume that presenting the target language as a series of discrete linguistic or sociolinguistic teaching points is the best, or even a way to get learners to synthesize the parts into a coherent whole" (p. 79). Instead, the use of task-based instruction is argued to be a better approach for its capacity to promote natural interactions between learners and provide them with more personalized feedback (Ellis, 2018; Ellis et al., 2020).

Tasks were the central components of all three lesson designs used in the study. Their purpose was to promote interaction and meaning negotiation among the participants. Long (1985) defines tasks as being "the hundred and one things people do in their everyday lives, at work, at play, and in between" (p. 89). A number of studies (e.g., Ellis et al., 1994; Ellis & He, 1999; Mackey, 1999) have focused on the relationship



between task induced meaning negotiation and SLA. In two EFL classroom studies in Japan, for example, Ellis et al. (1994) found that providing learners with opportunities to negotiate in real time led to better levels of comprehension and uptake of new vocabulary than simply providing them with pre-modified input. In another study by Ellis and He (1999), the ability of three different groups of EFL learners to understand directions and learn new words in a listen-then-do task (pre-modified input group; interactionally modified input group; and modified output group) were compared. The researchers ascertained that the modified output group was the most effective of the three. The group's higher comprehension and vocabulary uptake was attributed to the participants' more intensive participation during the learning task. Furthermore, Mackey (1999) investigated how varying degrees of active and passive participation affected the ability of adult ESL learners to acquire new target language knowledge. Her findings indicated a strong link between interaction and grammatical development, particularly when active participation was involved.

In the later version of the interaction hypothesis (Long, 1996), other ways that meaning negotiation could promote SLA were also recognized, such as the feedback learners receive on their own output, as well as the modified output they produce when reformulating their utterances (Ellis, 2018). The revised version more clearly defined the role of meaning negotiation as a process by which a learner's attention could be directed towards specific (explicit) linguistic forms and prompted into noticing while engaging in primarily meaning-focused interactions. Long (1996) explains, "Negotiation of meaning, and especially negotiation work that triggers interactional adjustments by the NS or more competent interlocutor, facilitates acquisition because it connects input, internal learning capacities, particularly selective attention, and

output in productive ways” (pp. 451-452). Understanding how different classroom conditions can affect learner interaction, noticing and reflection was of great interest to the present study.

### **2.3.3 PROVIDING OPPORTUNITIES FOR OUTPUT**

Output in EFL learning contexts is the English spoken or written by L2 learners produce when they engage in acts of speaking or writing. Krashen (1982, 2003) claims that output is the result of acquisition. On the other hand, Swain (1985, 1995, 2005) posits that output is the root cause of acquisition. Swain (1996) proposes that the best way for learners to develop better implicit understanding of the morphosyntactic elements of an L2 is for them to be pushed to produce output during meaning focused classroom interactions. Based on research from French Canadian immersion programs, Swain (1995) claims that comprehensible input by itself is insufficient for SLA. Having spent many years in such contexts, Swain noted that immersion program learners often ended up being highly fluent but consistently inaccurate in their production of even the most commonly used linguistic structures. Despite receiving significant amounts of input on a daily basis, their accuracy was said to suffer, due to their lack of opportunity to speak during class times. Output works in tandem with input. It serves as a cognitive trigger that fosters the types of form-focused processing needed for higher levels of acquisition to take place (Ellis, 2018). Swain (1995) categorizes three functions of output in relation to accuracy building:

1. The noticing/triggering function - the consciousness-raising role.
2. The hypothesis-testing function.
3. The metalinguistic function - the reflective role. (p. 128)

The first function - noticing/triggering - relates to the capacity of learners to notice gaps in their knowledge of the target language while producing L2 output. It is hypothesized that learners will notice things they do not know or only partially know about in the L2, and consciously recognize what they need to know to improve their productive skills. The second function - hypothesis-testing - relates to the way learners use output production opportunities to test new forms and structures. By doing so, they stretch their interlanguage to meet their communicative needs, to see what works and what does not. Previous research (e.g., Iwashita, 2001; Pica et al., 1989) has shown that links can be made between meaning negotiation and learner-generated hypothesis testing in the form of modified learner output. The third metalinguistic function serves as a way for learners to reflect upon their success or failure in self-generated attempts to understand how something is said or written. Output provides learners with opportunities to talk about the language they attempt to produce, helping them incorporate new linguistic knowledge into their interlanguage or revise outdated concepts. According to Swain (2005), the metatalk that learners engage in while comprehending or producing language is an important source of learning. In the present study, different ways to promote learner output were carefully considered for all three lesson designs. Done correctly, they have the potential to focus a learner's attention on designated lexical items through a sense of necessity. For instance, when creating a collaborative dialogue, EFL learners need to discuss the materials provided to them in order to achieve the task's goal. As a result, the output produced during this process has the potential to stretch their understanding of the targeted language presented and promote uptake.

Although comprehensible input may be particularly important at the early stages of language development, producing output forces “the learner to move from semantic processing to syntactic processing” (Swain 1985, p. 249). To acquire higher levels of linguistic accuracy, prolonged exposure to input is not enough. Exposure to long periods of language practice in the form of creating descriptions or summaries, and making explanations or justifications, are also necessary. By pushing learners to produce L2 output, EFL teachers are able to create environments where their learners can be encouraged to pay greater attention to feedback and proactively engage in self-repair. By allowing learners opportunities to recognize the gaps between what they want to say and what they can say, such classroom environments can support higher levels of noticing and more accurate L2 language use (Lesser, 2008; Zalbidea, 2021). In accordance with Swain (1985, 1995, 2005), the three treatments used in the current study not only promoted opportunities for the participants to engage with the input, but to also actively produce output, and to hear it produced by others. In doing so, closer attention was paid to the linguistic forms presented in each task and more opportunities for uptake occurred.

#### **2.3.4 FOCUS-ON-FORM INSTRUCTION IN EFL CONTEXTS**

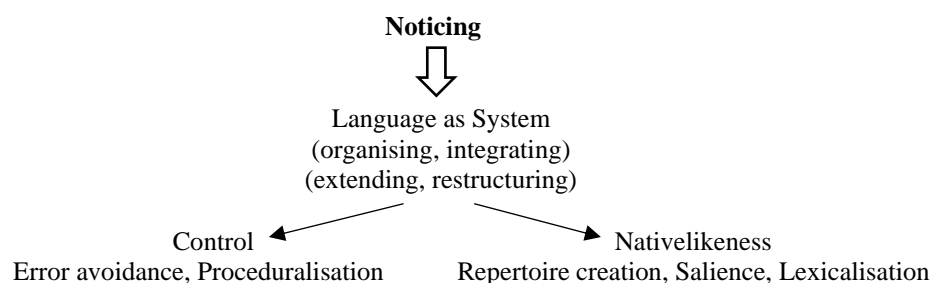
One of the greatest challenges EFL learners face studying English in classroom settings is the lack of opportunities to practice speaking the language naturally. Even when provided with such occasions, syntactic and morphological information can often go unnoticed, particularly when the forms are redundant or non-salient. An example of this would be adding the ‘s’ to the end of a verb after third person singular pronouns, e.g., He plays baseball. With or without the ‘s’, the meaning of the sentence is not obstructed, so it is not necessary for learners to pay close attention to it.

Consequently, it is important for teachers to find ways to trigger their learners' cognitive awareness of new linguistic knowledge or to help consolidate any existing knowledge the learners may already have.

The noticing hypothesis (Schmidt, 1990, 2001) proposes that L2 learners must first consciously register different forms of language input for there to be any opportunity to acquire it. The older an L2 learner is when commencing study, the more conscious attention is needed as “adults do seem to have lost the still mysterious ability of children to acquire the grammatical forms of language while apparently not paying attention to them” (Schmidt, 1983, p.172). The noticing hypothesis describes awareness on two different levels at the point of noticing and at the point of understanding. Awareness at the point of noticing is the “conscious registration of the occurrence of some event” and at understanding it is the explicit “recognition of a general principle, rule or pattern” (Schmidt, 1995, p. 29).

EFL learners strive to achieve native-like fluency based on memorized choices they have stored in their interlanguage. As Figure 2.2 shows, noticing is first followed by learners focusing on their understanding of the language system. From there, however, issues related to accuracy and fluency compete for their attention.

Figure 2.2  
*Noticing and Sequences of Acquisition*



*Note.* From “Nurturing noticing,” by P. Skehan, 2013, p. 173. ([https://www.researchgate.net/publication/283676452\\_Nurturing\\_Noticing](https://www.researchgate.net/publication/283676452_Nurturing_Noticing)). Copyright 2013 by University of Hawai‘i, National Foreign Language Resource Center.

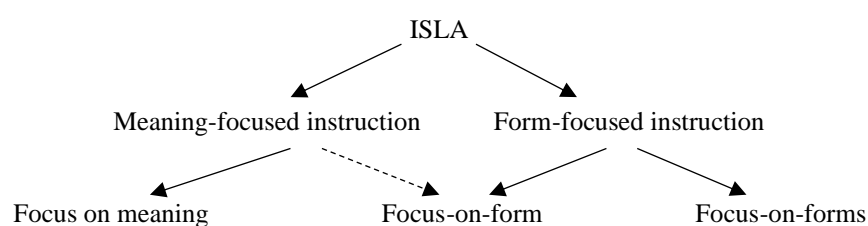
Accuracy deals with the learner attempting to achieve control over the emerging system, and fluency deals with their attempts to achieve automaticity; being able to use the language quickly and easily in a range of diverse conditions (Skehan, 2013). In EFL classroom settings, as in the real world, these two processes occur sequentially, not concurrently. The amount of attention learners allocate to each one at any given time depends on a combination of external factors (e.g., discourse style, interactional context, instructional process, task characteristics) and internal factors (e.g., motivation, proficiency, learning strategies). As Skehan (2011) contends, both inclinations and abilities affect who notices what and a strong aptitude for explicit learning can help older L2 learners compensate for their age-related deficiencies for implicit learning.

In a study by Leow (2000), a crossword puzzle used to manipulate the attention of learners exposed to Spanish stem-changing verbs found that those who demonstrated the highest level of understanding of the forms were able to learn the most, followed by those who noticed them but were unable to generalize them. In the absence of noticing, no learning was found to have taken place. In another classroom context, Mackey (2006) found a strong relationship between feedback and noticing. Learners themselves reported having noticed more when feedback was provided, and those who were observed to have noticed more, were seen to have improved more than those who did not. Opportunities to produce output also provide learners with what Schmidt and Frota (1986) describe as auto input - that being the input they provide themselves with.

In an experimental study by Izumi (2002), the effects of output and modified input on noticing and uptake were investigated. Learners who engaged in a combination of output-input activities were found to make more substantial learning gains than those who only received modified input for comprehension purposes. From the results, Izumi concluded that enhanced input on its own was not comparable to the learning benefits that could be obtained by providing learners with opportunities to produce output as well.

Instruction that focuses exclusively on meaning develops implicit learning, emphasizing fluency over accuracy. On the other hand, instruction that focuses on explicit learning centres on form-focused instruction, accentuating accuracy over fluency. To bridge the gap and create a learning environment that balances a learner’s attention to both meaning and form, Long (1991, 1996) proposed an instructional procedure known as focus-on-form (FOF) - see Figure 2.3.

Figure 2.3  
*Meaning and Form-Focused Instruction in ISLA* (Adapted from Loewen, 2020)



*Note.* Adapted from “Introduction to instructed second language acquisition,” by S. Loewen, 2020, (<https://doi.org/10.4324/9781315616797>). Copyright 2020 by Taylor & Francis.

Form describes all grammatical, lexical, phonological, and pragmatic features of a language. The purpose of the FOF procedure is to develop the learner’s communicative fluency and linguistic competency by nurturing opportunities for them to pay attention

to form-related issues in larger meaning-focused contexts (Loewen, 2020). In contrast to the more traditional linear-based instructional procedure, focus-on-forms (FOFs), which treats each linguistic item as an isolated feature and has long been used in EFL teaching, Long (2015) describes FOF as an analytical approach, whereby the learners' attention to form arises out of their own efforts to understand and produce meaningful L2 output. Whereas FOFs instruction is limited to the explicit instruction of individual forms, FOF instruction involves the promotion of intermittent form-focused episodes, whereby a learner's attention shifts naturally to deal with linguistic issues as they come up (Doughty and Williams, 1998). For FOF, attention to form needs to occur under relatively implicit (meaning-focused) circumstances. Long (2007) cautions that, if form-related issues become too synthetic, the primary focus of a learner's attention will move away from meaning, and the positive learning effect of having learners attend to forms themselves in meaning-focused contexts will be lost. At the same time, if instruction becomes too implicit, there is a risk that linguistic features will go unnoticed (Leow, 2018).

The primary theoretical concern of FOF is how best to incorporate teaching techniques that can optimize the chances that a learner's attention will be directed to form-related issues as they engage in L2 communication. Ellis (2001) draws a distinction between incidental and planned FOF, arguing that both are useful to further a learner's development. He describes incidental FOF as involving the spontaneous one-off attention paid to various linguistic items as they arise during classroom interaction. On the other hand, planned FOF consists of a more concentrated effort by the teacher to limit the focus of a learners' attention to a certain number of targeted language structures. While unfocused tasks can be used to instigate incidental noticing, focused



tasks can be used to promote planned FOF, by creating obligatory instances where learners must (periodically) focus their attention on particular linguistic features in order to achieve a predetermined communicative goal (Philp et al., 2010).

The spontaneous nature of incidental FOF makes it difficult to measure uptake using pre-test/post-test comparisons. As is the case with the current study, planned FOF allows specified linguistic items to be targeted (Loewen, 2020). A number of studies (e.g., Al Muhaimed, 2013; Page & Mede, 2018; Saeidiet et al., 2012) have compared planned (task-based) FOF with traditional FOFs instructional procedures. Planned FOF is sometimes referred to as task-based instruction (TBI) and FOFs as traditional instruction. In a study by Al Muhaimed (2013), TBI was proven to increase the learners' reading comprehension of the course's content significantly more than traditional instruction. Investigating the vocabulary development of 97 students in a 7<sup>th</sup> grade ESL program, Page and Mede (2017) likewise concluded that TBI not only increased the learners' uptake of vocabulary more than traditional instruction but also increased their motivation to learn. Saeidi et al. (2012) also compared vocabulary development in three classes: (1) FOF, using a dictogloss task; (2) Focus on Meaning (FOM), using a reading and discussion task; and (3) FOFs, using word lists. Of the three groups, the learners from the FOF group scored significantly higher than members of the other two groups, suggesting that the task's design promoted greater opportunities for in-depth processing, noticing, negotiation, collaboration, and pushed output than the other two instructional procedures.

For the current study, the instructional approach for all three tasks was based on the FOF concept. In short, learners benefit most from form-related discussions when such

episodes are initiated by the learners themselves. Such situations allow learners the capacity to attend to issues they select and feel are most problematic. One objective of the study was to better understand how instructional design features affect the balance between meaning and form. To measure the relationship between task design, communication mode, and uptake, all three tasks were designed to promote planned FOF.

### **2.3.5 THE RELATIONSHIP BETWEEN ATTENTION AND UPTAKE**

When learners are confronted with linguistic challenges in their task-based discussions, they are forced to switch their attention back and forth between meaning and form. Selective attention of this kind puts great pressure on a learner's working memory (Ellis et al., 2020). The limited attention capacity (LAC) model (Skehan, 1998) argues that factors related to complexity, accuracy, and fluency in task performance compete for cognitive resources. The model is based on the premise that: (1) more advanced language increases in complexity; (2) error avoidance leads to higher accuracy, and; (3) the opportunity to produce uninterrupted speech at a normal pace leads to greater fluency. Skehan (2018) says, "If performance in each of these areas ... requires attention and working memory involvement, then committing attentional resources to one may have a negative impact on others" (p. 35). In short, it is impossible for a learner to effectively attend to complexity, accuracy, and fluency at the same time.

Task characteristics and conditions impact the way learners carry out tasks, both separately and in relation to each other (see Table 2.1). Investigations concerning LAC often examine characteristics such as task structure (Foster & Skehan, 2012), conditions such as time allocated for planning (Skehan, 2014), and potential crossover

effects between the two such as task structure and time perspectives (Wang & Skehan, 2014).

Table 2.1  
*Limited Attention Capacity Model*

<b>Code complexity</b>	<b>Cognitive complexity</b>	<b>Communicative stress</b>
<ul style="list-style-type: none"> <li>• Linguistic complexity and variety</li> <li>• Vocabulary load and variety</li> <li>• Redundancy and density</li> </ul>	Cognitive familiarity <ul style="list-style-type: none"> <li>• Familiarity of topic and its predictability</li> <li>• Familiarity of discourse genre</li> <li>• Familiarity of task</li> </ul> Cognitive processing <ul style="list-style-type: none"> <li>• Information organization</li> <li>• Amount of computation</li> <li>• Clarity of sufficiency of information given</li> <li>• Information type</li> </ul>	<ul style="list-style-type: none"> <li>• Time limits and time pressures</li> <li>• Speed of presentation</li> <li>• Number of participants</li> <li>• Length of text used</li> <li>• Type of response</li> <li>• Opportunities to control interaction</li> </ul>

*Note.* From “A Cognitive Approach to Language Learning,” by P. Skehan, 1998, p. 99. (<https://doi.org/10.1177/003368829802900209>). Copyright 1998 by Oxford University Press.

Unlike Levelt’s (1989, 1999) depiction of L1 language speakers, the LAC model purports that L2 speakers lack the capacity for parallel processing between the conceptualization and formulation stages of speech. Skehan (2018) argues that the L2 learner’s capacity to conceptualize and formulate utterances should be considered separate. Although processing during the conceptualization stage for both L1 and L2 speakers is basically the same, L2 learners struggle much more to formulate the language they require to properly express themselves. Essentially, they struggle because the demands put on their mental lexicon by the pre-verbal message cannot be consistently met due to their L2 lexicon being less extensive, less elaborate, and not as well organized. In terms of task difficulty then, factors that increase the cognitive load

during the conceptualization stage of a task are asserted to be different from those factors that increase demands at the formulation stages.

Table 2.2 shows how task characteristics and task conditions have the potential to increase or reduce the level of cognitive operations during either the conceptualization or formulation stages.

Table 2.2  
*Task Factors that Affect Difficulty*

<b>Conceptualization Stage</b>	<b>Formulation Stage</b>
<ul style="list-style-type: none"> <li>• More unfamiliar, abstract information (vs. more familiar, concrete information)</li> <li>• More complex manipulation of information (vs. less complex manipulation)</li> <li>• Number of steps</li> <li>• Transformation of material</li> <li>• Linkage of different pieces of information</li> <li>• Need to justify assertions, and respond to challenges</li> <li>• Likelihood of pre-task planning opportunities used to handle ideas</li> </ul>	<ul style="list-style-type: none"> <li>• Lexical demands of a task</li> <li>• The degree of structure in a task</li> <li>• Likelihood of pre-task planning opportunities used for rehearsal and organisation</li> <li>• Opportunities for on-line planning</li> <li>• General time pressure conditions</li> <li>• Familiarity with a task design</li> <li>• Working memory demands while a task is being carried out</li> <li>• Opportunities for discussion about what to do during a task</li> </ul>

*Note.* Adapted from “Second language task-based performance: Theory, research, assessment,” by P. Skehan, 2018, (<https://doi.org/10.4324/9781315629766>). Copyright 2018 by Taylor & Francis.

Variables that place high demands on learners during the conceptualization stage of a task may in turn lessen their ability to closely attend to form related issues during the formulation stage. On the other hand, variables that support learners during the formulation stage can possibly increase their capacity for parallel processing. Skehan (2009) proposes such variables be categorized into four groups: complexifying variables, easing variables, pressuring variables, and focusing variables. Complexifying variables are described as those that increase complexity, which add to the amount of work involved during the conceptualisation stage of a task. Easing

variables are explained as those that reduce the burden on the formulator, by simplifying lexical demands or providing linguistic support, as done in planned tasks. Pressuring variables, on the other hand, are task conditions that are said to add to the challenges learners face formulating output, like added time constraints. Focusing variables are those factors that lead a learner to pay closer attention to one task aspect over another. These can relate to particular goals or steps, like the anticipation of a future post-task activity (e.g., a test). By categorizing task characteristics and conditions into variables like these in L2 research, Skehan (2018) argues that the findings can align more easily with the stages of Levelt's (1989) L1 speaker model and bring about better understanding about how the negative effects of the LAC model can be surpassed, and trade-offs between meaning and form can be managed better to increase SLA opportunities in the L2 classroom. The aim of the present study was to better understand which task variables have greater influence over others, under what circumstances, and how the findings can be applied to L2 pedagogy.

## **2.4 TASK-BASED LANGUAGE TEACHING**

TBLT is a cognitive-interactionist approach to L2 teaching that prioritizes meaning, while not overlooking the value of form (Long, 2015). Having established the importance of task-based instruction during the communicative language teaching (CLT) movement of the 1970s and 1980s, TBLT is the realization of a broad array of CLT philosophies at the level of syllabus design and methodology (Ellis et al., 2020; Nunan, 2004). Unlike more traditional approaches, TBLT does not view acquisition as teacher-driven but as learner-driven. Language is not treated as an object to be systematically taught and learned deliberately, but rather as a tool learners use to communicate with each other.

To make a distinction between a task and a traditional grammar focused activity, Shintani and Ellis (2014) propose criteria to define them (see Table 2.3). Such criteria were recommended to measure the extent to which the design of materials resembles a task. Shintani and Ellis acknowledge that sometimes it may be difficult to satisfy all conditions in one design, so each task should be gauged by its task-likeness. Given the difficulty of predicting how learners will actually carry out tasks in a classroom environment, Ellis et al. (2020) also caution that researchers should consider designs as a type of workplan, as opposed to a task-as-process (actual task performance). For data collection, how a task is intended to be carried out at the design stage and how it ends up being carried out by learners can at times be very different.

Table 2.3  
*Task Criteria for Task Design*

<b>Criteria</b>	<b>Description</b>
<ul style="list-style-type: none"> <li>The primary focus of the task is on meaning.</li> </ul>	The primary concern of learners should be on the communicative purpose of the task.
<ul style="list-style-type: none"> <li>There is a gap in the task design.</li> </ul>	The task must create a need for learners to communicate information, give reasons, and/or express opinions to each other.
<ul style="list-style-type: none"> <li>Learners must rely mostly on their own language skills to complete the task.</li> </ul>	The task offers no explicit example of how language should be used to complete the task.
<ul style="list-style-type: none"> <li>There is a clear communicative goal to the task.</li> </ul>	Success is measured on the extent that learners are able to carry out the task, not on the type of language they use.

*Note.* Adapted from “Exploring language pedagogy through second language acquisition research,” by R. Ellis, & N. Shintani, 2013, (<https://doi.org/10.4324/9780203796580>). Copyright 2013 by Taylor & Francis.

TBLT has shifted the focus of instruction away from the outcome of learning to the process of learning itself (Nunan, 1989). The cognitive-interactionist underpinnings of TBLT increasingly support a principled, necessary, symbiotic relationship between

incidental and intentional learning, based on established SLA research findings (Long, 2015). Ellis et al. (2020) state:

The recognition that task-based teaching does not necessitate an exclusive focus on meaning but also allows for (indeed requires in the opinion of many commentators) attention to form during task performance of a task constitutes one of the major [ongoing] developments in TBLT. (p. 16)

As mentioned previously, a total reliance on implicit instruction in most EFL contexts is not practical, because it requires an immersion style of learning that essentially surrounds the learners with the L2 for extensive periods of time each day. Long (2015) concedes that, for most foreign language learning contexts, such time is not available, and the capacity of older L2 learners to respond to implicit instruction as effectively as children is questionable. In EFL contexts, the incorporation of specified target language items to some extent in task designs is needed to enhance the EFL learners' capacity to notice new forms. In TBLT, pedagogical tasks are designed to accentuate certain forms by creating a communicative need. These are somewhat different from real-world tasks (e.g., renting an apartment, making a doctor's appointment, planning a holiday), which rely exclusively on incidental opportunities for noticing to occur. Pedagogical tasks instead aim at incorporating a blend of both direct and indirect focus-on-form instruction by having learners engage in more general language exchanges (e.g., exchanging ideas, solving problems, listing priorities).

The goal of a pedagogical task is to have learners participate interactively with specified target language items (e.g., comprehend them, manipulate them, produce them), while continuing to maintain an overall focus on the exchange of meaning

(Nunan, 2004). Instead of promoting the situational authenticity that can be seen in real-world tasks, pedagogical tasks focus on creating interactional authenticity, thereby promoting the same kinds of “natural language processing found in communication in the world outside the classroom” (Ellis, 2017, p. 508). Particularly in EFL settings, where contact time with the language is limited, periodically drawing students’ attention to form-related issues both directly and indirectly may be a more effective way of promoting the noticing of unfamiliar (particularly less-salient) forms. Richards and Rodgers (2001) provide examples of five common types of pedagogical tasks:

- Jigsaw task: Tasks that combine different pieces of information together to form a whole (e.g., two or three different parts of a story).
- Information-gap task: Tasks that involve a transfer of information between two students or two groups of students. The participants must negotiate and find out what the other party’s information is in order to complete the task.
- Problem solving task: Learners are given a problem and a set of information. They must arrive at a solution to the problem. There is generally a single resolution for the outcome of such tasks.
- Decision-making task: Learners are presented with a problem for which there are many outcomes and must decide on one through negotiation and discussion.
- Opinion exchange task: Learners engage in discussions and exchanges of ideas. They do not need to reach an agreement. (p. 162)

Based on the proposals of various researchers (e.g., Lee, 2000; Prabhu, 1987; Skehan, 1996; Willis, 1996), task-based lessons are commonly separated into three distinct stages: a pre-task, a main task, and a post-task (see Figure 2.4).



Figure 2.4  
*A Task-Based Language Teaching Framework*

<b>Pre-task</b>
Build schema around a topic, foster the learners' interest, introduce target language items related to the task
<b>Main task</b>
Have learners attempt to achieve the interactional objective
<b>Post-task</b>
Review issues related to performance and form, carry out additional practice

Although the main task is the key component used to achieve the communicative goal of each lesson, the pre-task and the post-task stages prepare learners beforehand and consolidate possible learning gains afterwards. As Ellis et al. (2020) explain, the pre-task is first used to arouse learners' motivation to carry out the task by showing them how the subject matter relates to their lives and/or the world around them. The pre-task is also used to familiarize learners with the task procedures and outcomes, as well as have them focus on any linguistic or schematic knowledge they may find useful. For the main task, Willis (1996) recommends that teachers stand back and allow learners to carry it out uninterrupted, resisting the urge to provide support or correct them. At the same time, Long (2015) also argues that ways must be found to draw learners' attention towards issues of form, such as proposed in the instructional procedures set out in focus-on-form. Lastly, Ellis et al. (2020) state that the post-task stage provides three pedagogical goals: (1) to allow learners time to reflect on their performance; (2) to offer them a chance to perform it again; and (3) to promote attention to form-related issues.

Early descriptions of task designs were based on the type of interaction they were seen to produce. Prabhu (1987) classified them based on whether they produced one-way

or two-way exchanges of information; whether they were convergent or divergent in nature; whether they required students to be collaborative or competitive with each other; and whether single outcomes or multiple outcomes were made possible. Pica et al. (1993) propose that language acquisition is best promoted by tasks that:

- Have interactants hold different portions of information that need to be exchanged and manipulated in order to reach a task outcome.
- Require both interactants to request and supply information to each other.
- Require interactants to have the same or convergent goals.
- Allow for only one acceptable outcome from their attempts to meet the goal.

(p. 17)

The long-term objective of TBLT research is to ascertain what effect different design and implementation variables can have on language development. Initially, the primary focus was on how such variables could be used to increase negotiation of meaning, which was seen as a direct sign of learning. Over time, however, the focus has expanded to measurements of task performance, as prescribed in the Limited Attention Capacity Model (Skehan, 2018). These measurements of task performance include issues related to complexity, accuracy, lexis, and fluency (Skehan, 2018). Table 2.4 outlines task design variables that have been seen to have an impact on task performances.

Table 2.4  
*Task Design Variables*

<b>Tasks variables</b>	<b>Descriptions</b>
Monologic vs. dialogic	A monological task is not interactive. It requires a single speaker to speak for long, uninterrupted, periods of time. Dialogic tasks are interactive and require participants to take turns speaking for shorter periods of time.

The number of task elements to be manipulated	A task may require a learner to contemplate a few issues or many issues at the same time.
Topic familiarity	A familiar topic is one the learner is already quite knowledgeable about.
Shared or split information	A task can allow participants to have equal access to information or be divided among them.
Single or dual task	A task may require single goals or multiple goals.
Closed vs. open	For closed tasks, like an information gap, there is only one outcome (or a limited number of outcomes) which can be reached. For open tasks, like opinion exchanges, there can be numerous possible outcomes.
Discourse type	Task designs may lead to different types of discussions, like giving descriptions or instructions, making arguments, or offering advice.
Here-and-now vs. there-and-then orientation	A task may require a learner to describe something that is happening in front of them at that moment, or to describe something that happened before.

*Note.* Adapted from “Task based language teaching,” by R. Ellis, 2017, (<https://doi.org/10.4324/9781315676968>). Copyright 2017 by Taylor & Francis.

Ellis (2018) states that split information tasks are seen to promote more negotiation than shared information tasks. Higher levels of task familiarity are also linked to higher rates of accuracy and fluency during learner performances. Finally, tasks that require learners to consider many things at the same time are suggested to result in more complex language.

The issue of task difficulty and how it can be measured in relation to design and implementation variables is of great importance to textbook designers, curriculum developers, and teachers alike. Some of the criteria commonly proposed to determine the difficulty of pedagogical tasks are:

- The linguistic complexity of the input provided by a task.
- The amount of input provided in the task.
- The number of steps involved in the execution of the task.

- The degree of structure in the information presented or required in the task.
- The number of objects, events, or people involved.
- The extent to which a task requires reference to present, past, or future events.
- The intellectual challenge posed.
- The learners’ familiarity with the topic of the task. (Ellis et al., 2020, pp. 7-8)

What makes determining task difficulty so challenging is that there are a number of overlapping elements involved in making such calculations. At the very least, these relate to the learner, the structure of the task, and the complexity level of the text used.

How these issues may overlap can be seen in Table 2.5.

Table 2.5  
*Factors Affecting Task Difficulty*

Easier <span style="font-size: 2em;">→</span> More Difficult	
<b>The Learner</b>	
High level of confidence	Low level of confidence
High level of motivation	Low level of motivation
Sufficient previous learning experience	Insufficient previous learning experience
Able to learn at the required speed	Unable to learn at the required speed
Has the language skills needed	Does not have the language skills needed
Has sufficient cultural understanding	Does not have sufficient cultural understanding
<b>Task structure</b>	
Cognitive complexity is low	Cognitive complexity is high
Few steps involved	Many steps involved
Large amount of contextual support available	No contextual support available
Large amount of help available	No help available
No need for grammatical accuracy	Grammatical accuracy is necessary
Unlimited amount of time available	Little time available
<b>Task text</b>	
Short and simple, with few facts	Long and dense, and a large number of facts
Clearly presented	Presented vaguely
Large number of contextual clues	Few or no contextual clues
Familiar language used	Unfamiliar language used

*Note.* Adapted from “Factors affecting task difficulty,” by G. Brindley, 1987, as cited in D. Nunan, 2004, pp. 85-86, (<https://doi.org/10.1017/CBO9780511667336>). Copyright 2004 by Cambridge University Press.

Although a learner may be confident and motivated to engage in a task that appears straightforward and contains familiar language, time restrictions, along with insufficient experience doing such a task, may dramatically change the difficulty level. Depending on the language proficiency of the learner at the time, such factors can either have a positive or negative impact on their capacity to notice form-related issues. Researchers like Robinson (2001a) and Martyn (2001) argue that task features that create greater cognitive demands and more complex communication lead to increased negotiation and pushed learner-output. On the other hand, Skehan (2018) warns that, if the cognitive demands of a task are too great, it will cause an overload of the learner's working memory and diminish their ability to notice learning opportunities.

Properly constructed task designs can enable teachers to push learners to produce particular language forms. When learners produce such language, noticing can occur immediately before or afterwards, in the form of self-repairs or modifications of perceived shortcomings. Depending on how task complexity affects the cognitive load of a learner, noticing depends on the extent to which learners attempt to engage the targeted task language, or avoid it and use language they are already familiar with to complete the task. Skehan (2018) states that knowledge about task characteristics and conditions is key to understanding how tasks can be utilized to foster automatization and guarantee new language is adapted into usable and non-attention-demanding language. Consequently, ongoing research is needed to provide evidence for teachers to better understand how different task designs, employed in various conditions, can be used to best maximize the learning potential of different groups of learners. The aim of the current study was to identify how various tasks carried out in both online

and f2f environments affected the learning potential of EFL university students differently.

## **2.5 COMPUTER-MEDIATED COMMUNICATION IN CALL**

Interest in how emerging technologies can be used to enhance L2 learning is nothing new. Since the 1960s, the field of Computer-Assisted Language Learning (CALL) has gradually evolved alongside pedagogical developments in teaching and learning (Son, 2018). As Reinders and Stockwell (2017) explain, Internet connections in most parts of the world have become increasingly more reliable and faster. Digital devices such as laptops, smartphones, and tablets have also become more affordable for both institutions and individuals. Therefore, the potential advantages such technologies offer learners mean that they must be investigated extensively in an array of different contexts. These include situations where L2 courses are conducted entirely online, or in a hybrid form consisting of both f2f and online elements. A major goal of CALL research is to understand how best to integrate technology into L2 learning. As Loewen (2020) notes, it is not to assume that technology has the power to alter the cognitive processes involved, but rather the potential to enhance them.

At the very least, Grgurovic et al. (2013) suggest that L2 courses supported by CALL are as effective as those that are not. Particularly in richer nations, hybrid learning environments that incorporate a combination of f2f and computer-based instruction are increasingly becoming more common with students expecting technology to be integrated into their course work. Previous studies (e.g., Chen & Yang, 2014; Jung et al., 2019; Payant & Bright, 2017) have shown that young learners believe hybrid courses that include technology for their daily lives provide them with more useful

learning opportunities (Payant & Bright, 2017). The use of technology increases learner participation, promotes speaking skills, and facilitates the development of vocabulary and grammar (Jung et al., 2019) and provides opportunities for the development of linguistic and intercultural communication skills (Chen & Yang, 2014). As Blake (2017) notes, learning in CALL contexts has the power to heighten learner autonomy and self-agency, which enables learners to take more responsibility for their own language development. Incorporating technology in the classroom has the potential to make learners more active participants by their becoming online researchers, creators of wikis and blogs, and anonymous interlocutors in computer-mediated communication (CMC) exchanges.

Underscored by many of the same cognitive-interactionist theories found in the field of TBLT, CMC research looks at ways asynchronous (deferred time) and synchronous (real-time) interaction through networked computers can facilitate learning. Ziegler (2016) states that research in TBLT and CMC can mutually benefit from using TBLT as a framework to ascertain the effectiveness of CMC to “direct learners’ attention to specific target features and to provide opportunities to negotiate meaning, receive comprehensible input and corrective feedback, and produce modified output” (p. 137). Technological advancements in CMC have gradually brought about a perceptual shift from the Internet being viewed as simply a transmitter of information and provider of self-study applications, to it being seen as an interactive medium that language learners can use to engage one another. Most societies now embrace synchronous and asynchronous forms of CMC as a standard means of communication, closely interconnecting with the daily lives of most young learners. As such, online tools such as blogs, social network services (SNSs), learning management systems (e.g., Moodle),

and chatrooms provide teachers with progressively more dynamic ways in which to have their students interact with one another and the real world. By channelling learners' interests and digital learning styles, teachers have the ability to promote increasingly interactive, authentic, and purposeful learning opportunities (Sato et al., 2017). Consequently, contemporary L2 classrooms should be now expected to increasingly provide students with opportunities to practice such online forms of communication. An aim of the current study was to provide clarity as to how these modes can be used effectively.

### **2.5.1 SYNCHRONOUS COMPUTER-MEDIATED COMMUNICATION FOR TASK-BASED LANGUAGE LEARNING PURPOSES**

The practical benefits of utilising synchronous computer-mediated communication (SCMC) for distance education programs have become evident since the turn of the century (Blake, 2009; Blake & Shiri, 2012; Tudini, 2003; Volle, 2005). Blake (2005) argues that SCMC used for distance learning helps sustain student motivation by increasing their engagement and providing them with opportunities to practice new language they learn on a weekly basis. In the EFL classroom where it is obviously easier for students to speak with their classmates face to face, however, it remains unclear whether such technology has a benefit or not. Early investigations into SCMC (e.g., Abrams, 2003; Blake, 2000; Pellettieri, 2000; Smith, 2003, 2004) largely consisted of showing how text chat mediums can be used to provide learning opportunities similar to f2f exchanges. Often times, such studies did not include control groups to compare the effectiveness of text chat exchanges with f2f exchanges. The primary focus was limited to obtaining evidence of learner negotiations of meaning and form in task-based text chat interactions. Moreover, many of the results



of the studies were found to be inconclusive or contradictory (Gonzalez-Lloret, 2017). For example, in a study by Blake (2000), learners were reported to engage in more meaning negotiation while carrying out jigsaw tasks than decision making or information-gap tasks. Smith (2003), however, found that decision-making tasks seeded with unknown targeted language items could prompt more negotiation than jigsaw tasks. In yet another study, Keller-Lally (2006) concluded that task design did not play a role at all in the number of language-related negotiations learners engaged in. Trying to identify underlying commonalities between such studies is problematic as sample sizes, proficiency levels, and task conditions often vary.

Until now, there has only been a relatively small number of EFL studies that have compared the learning effects of classroom-based f2f communication with multiple SCMC (e.g., text chat, voice chat, video conferencing) modes. Of those studies, some (e.g., Kim, 2017; Zeng, 2017) have shown that task designs promote similar learning patterns across all communication modes. Other studies (e.g., Baralt, 2013; Li & Lewis, 2018; Satar & Ozdener, 2008; Yanguas, 2010, 2012; Yilmaz, 2011) have found that different SCMC modes have the potential to either intensify or reduce the cognitive load experienced by learners depending on the task design. In a study by Gurzynski-Weiss and Baralt (2014), intermediate learners engaged in an information gap task were found to be more receptive to participating in meaning negotiations in f2f exchanges than on text chat. In other studies, evidence has indicated that text chat provides better learning opportunities in simple tasks (Baralt, 2013; Yilmaz, 2011), particularly for lower-level learners (Satar & Ozdener, 2008). Other investigations into voice chat (e.g., Li & Lewis, 2018; Yanguas, 2010, 2012) have suggested that the communication environment positively strengthens task-based interactions and

negotiations for intermediate level learners. In relation to task conditions, Fuente (2003) and Hamano-Bunce (2011) found that time constraints resulted in less negotiation between learners using text chat than their f2f counterparts. In two studies by Yanguas (2010, 2012), time limits placed on the completion of a jigsaw task were seen to create more turn-taking and negotiation between voice chat dyads than either f2f or video chat dyads. The inability to use facial cues or gestures on voice chat was argued to amplify the awareness and urgency that learners felt to achieve the task's goal in time.

SCMC research on classroom interactions in EFL settings usually focuses on isolated factors and conditions that have the power to change the frequency and types of interactions learners engage in, or how such variables affect acquisition itself. Such variables can include different task designs, interlocutor characteristics, or contextual constraints. As Loewen (2020) argues, there is mounting interest in the probability that SCMC technology is one such variable. Although a growing body of research indicates that technology does affect the way learners engage each other in task-based language exchanges differently to f2f interactions, much is still unknown. Increasing recognition of the potential of SCMC makes the importance of understanding its strengths and weaknesses ever more important.

### **2.5.2 METHODOLOGICAL CONSIDERATIONS**

Regardless of how an investigation is designed, SCMC research necessitates ready access to a combination of hardware, software, and the Internet. Collecting reliable data in a classroom environment also is a challenge because of its highly complex nature, where both instructional and social factors must be taken into account (Dornyei,

2007). The practical demands of daily teaching schedules, learning environments, and types of tools available to researchers must likewise be factored in when considering how a project is to be undertaken (Stockwell, 2012). With so many variables at play, quantitative data collection and analysis methods alone are unable to capture the depth of strategy use and language development in CMC environments (Graham et al., 2011). A combination of both quantitative and qualitative approaches is needed to sufficiently comprehend and document the SLA processes involved.

Mixed methods research is an evolving paradigm that is gaining support in the field of applied linguistics. It is an amalgamation of (post)positivist and constructivist stances on research approaches (Walliman, 2021). As Riazi and Candlin (2014) explain, the (post)positivist paradigm is a deductive (top-down) approach that derives a hypothesis from a theoretical framework, then collects and analyses data that will either support or weaken that hypothesis. On the other hand, the constructionist paradigm is an inductive (bottom-up) data-driven approach that starts by seeking out meaningful patterns in the collected data in order to generate a hypothesis. While deductive studies generally employ correlational and experimental designs to obtain quantitative data, inductive approaches are often characterised as case studies or ethnographies used to collect qualitative data. Where language teaching and learning is concerned, Riazi and Candlin (2014) argue that mixing these two research methodologies can help investigators obtain a more complete picture of the objects of studies. By triangulating the results from quantitative and qualitative data sets, researchers are able to examine concepts from different perspectives.

Although they did not influence the research design of the current study, a summary of selected research papers published in the past 5 years is shown in Table 2.6. It is not a comprehensive review. However, it demonstrates various data collection and analysis methods employed by researchers examining the modal effects of SCMC. Most of the studies listed compare one type of online communication to f2f interaction. To measure learning benefits, the learners' pre-tests and post-tests are often assessed or transcripts of their conversations are coded and evaluated. Questionnaires and interviews are also conducted to obtain deeper insight into the learners' mindset.

Table 2.6  
*Overview of Recent Comparative SCMC Studies for Language Learning*

Author/s	Research focus	Method	Participants
Bagheri & Zenouzagh (2021)	Comparing f2f and SCMC (text chat) modality effects on interaction and speaking skills	Control & experimental group Placement test / Pre-study questionnaire Qualitative and quantitative analysis of f2f audio recordings and text chat logs.	30 Iranian EFL learners
Bryfonski & Ma (2020)	Comparing implicit and explicit feedback on SCMC (video chat)	Mixed methods Two experimental groups Quantitative: pre-test, post-test Qualitative: questionnaire, semi-structured interviews	41 adult Chinese language learners
Kim (2017)	Comparing f2f and SCMC (text chat) modality and task type effects on interlanguage variation in the classroom	Three task types: spot-the-difference, decision-making, and story-sequencing Qualitative and quantitative analysis of f2f audio recordings and text chat logs.	20 intermediate level ESL university students
Kim, Jung, & Skalicky (2019)	Comparing f2f and SCMC (text chat) on structural alignment effects on the development of direct and indirect questions	Mixed methods Control & experimental group Quantitative: pre-test, post-test, and delayed post-tests Qualitative: survey, interviews Analysis of f2f audio recordings and text chat logs.	50 Korean EFL university students
Lenkaitis (2020)	Gauging SCMC (video chat) effects on learner autonomy and development	Mixed methods Qualitative: pre-survey and post-survey. Quantitative: Weekly Likert-scale surveys. Coding of transcripts and statistical analysis of weekly surveys	25 L2 Spanish language university students

Li & Lewis (2018)	Investigating SCMC (voice chat and video chat) negotiation for meaning routines	General speaking proficiency test Two task types with embedded lexical items: spot-the-difference and problem solving Post task recall interview Quantitative analysis of voice and video chat recordings	8 Chinese EFL university students
Moradi & Farvardin (2019)	Comparing f2f and SCMC (text chat) on negotiation of meaning by mixed-proficiency dyads	Control & experimental group Two task types: spot the difference and jigsaw Qualitative and quantitative analysis of f2f audio recordings and text chat logs.	32 EFL learners at elementary and upper-intermediate levels
Tang (2019)	Comparing f2f and SCMC (text chat) modality and task type effects on learners' pragmatic development	Mixed methods Control & experimental group Task type: decision making Quantitative: pre-test, post-test and delayed post-test Qualitative: coding analysis of transcripts	30 L2 Chinese language university students
Yanguas & Bergin (2018)	Investigating SCMC (voice chat and video chat) modality and task effects on focus-on-form	Two experimental groups Two task types: jigsaw and dictogloss Pre-questionnaire Quantitative and qualitative coding and analysis of voice and video chat transcripts	78 L2 Spanish learners
Zeng (2017)	Comparing f2f and SCMC (text chat) modality and task effects on form-focused discussions	Placement test / Pre-questionnaire Two task types: dictogloss and jigsaw Post questionnaire Qualitative and quantitative analysis of f2f audio recordings and text chat logs.	32 Chinese second-year university EFL learners, aged 19-21

### 2.5.3 MODE EFFECTS ON LEARNING

The combination of technology with traditional classroom instruction is known as blended learning. By providing learners with opportunities to make use of online communication tools, teachers can allow them varying degrees of flexibility to take charge of their own learning experiences. Reviewing 26 case studies, Grgurovic (2017) concluded that blended learning environments provide an overall positive effect on L2 learning and that its popularity among classroom teachers will continue to grow in the future. At the same time though, she cautions that the effectiveness of online tools is

very much context-dependent on task design. SCMC technology (e.g., video chat, voice chat, text chat) can affect the cognitive load of learners, particularly those who are unfamiliar with them, or those who are not proficient speakers (Guo & Möllering, 2016). The digital literacy level of learners also plays a role in the effectiveness of each mode to promote learning and is important to consider when carrying out any form of data collection. As Son (2015) explains:

Digital literacy is the ability to use digital technologies at an adequate level for creation, communication, collaboration, and information search and evaluation in a digital society. It involves the development of knowledge and skills for using digital devices and tools for specific purposes. (para. 1)

The dynamics of each SCMC mode is different (See Table 2.7). For text chat, the capacity to maintain a record of utterances and scroll back over them at the interlocutor's convenience is different from voice chat, which does not provide any such form of visual aid. SCMC technology provides teachers with the power to manipulate learner interactions in varying ways as they engage in different task types. This power includes placing limits on or altering the communicative features at learners' disposal.

Table 2.7  
*Overview of SCMC Mode Features*

Video Chat	Voice Chat	Text Chat
Visual and verbal communication	Verbal communication	Written communication
Emphasizes speaking, listening, and gesturing skills	Emphasizes speaking and listening skills	Emphasizes reading and writing skills
Quick response time	Quick response time	Delayed response time

Requiring learners to use only text or voice communication in certain task-based contexts has the potential to either enhance or impede learning outcomes. Investigating text chat, Yilmaz (2011) and Zeng (2017) both found that learners were able to discuss more form-focused issues while engaged in a dictogloss task than a jigsaw task. Using the same content in both task designs, Zeng (2017) noted that learners were more likely to leave form-related discussions unresolved during the jigsaw task. Yilmaz (2011) suggested that the split information design of the jigsaw task (it required partners to share information while the dictogloss did not), coupled with the challenge of making themselves understood on text chat, increased the cognitive load learners experienced. The result in both studies was that learners therefore tended to prefer skipping over form-related issues.

Text chat research was most popular in the late 1990s and early 2000s, with its slower rate of communication and capacity to keep a visual record of utterances on the screen being touted to lower learner anxiety (Satar & Ozdener, 2008), increase learner involvement (Kern, 1995) and enhance attention to form (Warschauer, 1997). Arguments about its capacity to help learners increase their rate of grammatical development (Pellettieri, 2000), spoken fluency (Abrams, 2003), lexical improvement (Smith, 2004), and ability to negotiate meaning (Blake, 2000) have also been made. However, depending on the design, the mode also has the potential to increase learners' perceived difficulty level of the task. Unless participants are very confident in their typing abilities in the L2, the time lapse between responses may become much greater than in a f2f context. New topics may also pop up or old ones be reintroduced in the interlude, creating the potential to jumble communication and make the tasks all the more difficult.

Using storytelling tasks with different complexity levels, Baralt (2013) compared the capacity of learners to learn through recasts on text chat and f2f. Using a pre- and post-test design, the most complex tasks were found to promote more L2 development during f2f interactions and “the cognitively simple task led to the most L2 development in CMC [text chat]”, which may have meant that “the modality in which learners interacted therefore mediated the effects of cognitive complexity” (Baralt, 2013, p. 716). In short, the cognitively complex tasks in Baralt’s study were seen to push the f2f learners to process input more deeply than during the simpler tasks. On the other hand, the cognitively complex tasks on text chat resulted in overload. The simple tasks, conversely, resulted in less turn taking and allowed learners the opportunity to notice and negotiate form-related issues.

In another study by Tang (2019), the capacity to learn modal verbs in two decision making tasks was used to compare text chat and f2f communication. In post-test and delayed post-test results, f2f pairs were seen to outperform their text chat counterparts. The meaning-focused orientation of the tasks, coupled with the use of the target features being optional, possibly meant that “the CMC group used the extra processing time for meaning negotiation and decision-making, rather than experimenting with modal verbs” (p. 56). The f2f pairs were seen to use the modal verbs much more in their interactions. The text chat pairs, on the other hand, often replaced them with abbreviated forms or symbols. Such actions may be indicative of learners trying to find ways to lessen the cognitive load and complete the task in a timely manner.



Compared to text chat, voice chat can be considered more similar to f2f communication. However, without the ability to use gestures or facial clues, the mode also has the potential to promote unique interactional patterns. Analysing the transcripts of learner interactions from two tasks - spot the difference and problem solving - Li and Lewis (2018) found that, compared to video chat, the voice chat mode increased the difficulty learners experienced recognizing the triggers (the cause) and indicators (the specific issue) for non-understanding. With a complete reliance on aural input, Li and Lewis argued that learners were forced to employ a more rigorous series of confirmation checks with their partners than they would have done in a f2f exchange. They went so far as to even propose two new stages of negotiation of meaning being required in voice chat interactions: a confirming trigger and a confirming indicator, claiming that a second check of the trigger (the cause) and a second check of the indicator (exact problem) should be considered typical in the negotiation processes on this mode.

In another study by Yanguas and Bergin (2018), a dictogloss and jigsaw task were used to compare video and voice chat interactions between learners. The number of form-related discussions that took place during the exchanges on both modes was calculated as being the same. However, a significantly larger number of unresolved incidents was noted on voice chat, possibly because the pairs lacked the ability to use visual aids. The study, however, did not include a f2f (control) group, or the use of pre-tests and post-tests, so it is hard to gauge the mode's effect on learning in a classroom setting. In classroom environments, a total dependence on the spoken language has the potential to increase the intensity of negotiation patterns in task-based learner interactions, particular for those who are highly motivated to improve their

spoken communication skills (Li & Lewis, 2018). Understanding how online communication modes can affect learner interaction differently was a major goal of the current study.

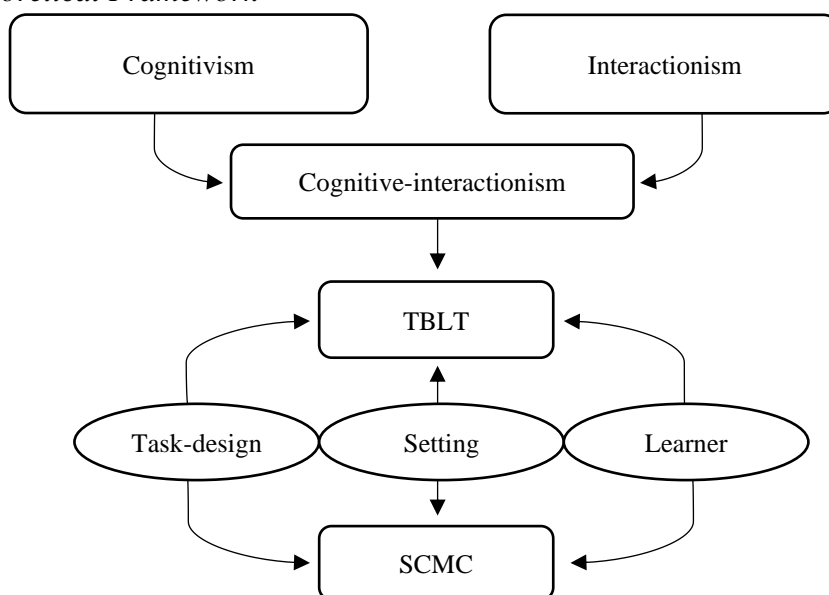
## **2.6 THEORETICAL FRAMEWORK**

This study's theoretical framework (see Figure 2.5 for a graphic representation) is based on cognitivist and interactionist language acquisition theories. The framework demonstrates how cognitive-interactionism draws on elements from both perspectives to explain the internal and external mechanisms involved in L2 acquisition, and how L2 acquisition differs from L1 acquisition. The framework shows that TBLT is a cognitive-interactionist approach, which advocates certain features and conditions considered optimal for L2 learning. As mentioned previously, these features and conditions include ways to promote meaningful task-based group work, which is often times collaborative, and the negotiation of meaning, while centring on learners' active participation. The framework illustrates the reciprocal relationship between TBLT and CALL research. Task-based SCMC research can better promote understanding of how online communication affects learning differently to f2f communication.

For SCMC research to move forward, more studies that incorporate different task designs and compare SCMC and f2f interactions are needed to ascertain when teachers can benefit from having their learners communicate online with each other in EFL classroom settings. As Lin, Huang, and Liou (2013) argue, the only way to take advantage of the communication opportunities offered by SCMC modes in the classroom is to determine which features may trigger the processes involved in SLA, and the only way to achieve that is "through a more transparent characterization of

SCMC conditions in future effectiveness studies” (p. 134). Employing mixed method research techniques similar to those used in the studies outlined in Table 2.6, this study aimed at measuring the capacity of EFL learners to notice new targeted L2 language while engaged in three different learning tasks. Its purpose was to determine which text chat and voice chat features can facilitate or impede opportunities for EFL learning to a greater extent than f2f interaction under classroom conditions at a Japanese university. It also investigated learner perceptions of task design and how online communication may affect those views.

Figure 2.5  
*Theoretical Framework*



## 2.7 SUMMARY

A considerable amount of SCMC research available at present clearly indicates that online modes of communication differ from f2f communication. Whether or not this means that it is beneficial for students to use them in a classroom though remains

unclear. Relatively few studies to date have attempted to compare SCMC and f2f communication in regular classroom settings. The lack of data could partly be due to the complexities involved in carrying out such studies in classroom environments. To have the best chance of understanding the relationship between communication mode, task, and learner, studies need to utilise both SCMC and f2f groups, as well as multiple task designs. With multiple factors at play (e.g., task, mode, learner, time), it can be very difficult for researchers to definitively isolate specific causes and to generalize results.

In EFL contexts, to isolate features or conditions that have an impact on learning outcomes and can possibly be generalised, it is necessary for the conditions of such investigations to replicate standard classroom conditions. This means sampling learners who have similar proficiency levels and likely speak the same L1. It also means possibly factoring in time restrictions, as EFL learners very often only have set amounts of time to complete task objectives in f2f interactions. The collection of both qualitative and quantitative data sets and the triangulation analysis of the results are also necessary to provide the best opportunity to understand the multi-faceted factors involved. If done well, the findings of such studies can provide teachers with in-depth insight into task-mode dynamics and greater understanding as to how SCMC can be used in real classroom settings.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 OVERVIEW**

This chapter presents the methodology of the study, detailing how it was designed and the procedures involved in the collection and analysis of data. It first presents the research design and the benefits of using a mixed methods approach in classroom investigations. It next describes participants in the study and how they were recruited. The process of developing data collection instruments is then explained, as well as the procedures used for gathering both qualitative and quantitative data. Finally, the methods used for analysing the data and triangulating the results are explained, along with any ethical considerations that needed to be taken into account.

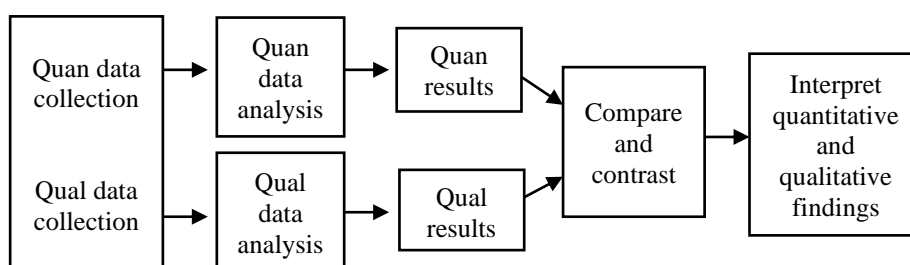
#### **3.2 RESEARCH DESIGN**

This study was greatly influenced by the cognitive-interactionist theory and its rationale for the effects of L2 instruction on SLA (Ortega, 2007), particularly the positive effects of TBLT on L2 learning (Robinson, 2011). The literature review in Chapter 2 outlined the relationship between task design and communication mode in EFL classroom contexts. The tasks used in the present study were designed within a cognitive-interactionist framework to promote the conditions Ortega (2009) prescribes as contributing to (but not guaranteeing) optimal L2 learning. Such conditions include: (1) creating an environment that acculturates learner attitudes; (2) providing learners with comprehensible input; (3) allowing opportunities for negotiation in the learners' interactions; (4) pushing learners to produce output; and (5) fostering the noticing of new language forms. These conditions underpin the TBLT approach to L2 instruction

and formed the basis for the research design. Tasks were constructed in alignment with empirically supported SLA findings to gauge the differences and similarities between task-based learning in f2f interactions and two SCMC modes: text chat and voice chat.

A mixed methods approach was adopted to address the key research questions. The literature review identifies mixed methods as being the most common and useful approach to language-related research today (see Section 2.5.2 for methodological considerations). Dornyei (2007) argues that, in order to understand the “intricate tapestry of classroom events” (p. 176), a combination of both quantitative and qualitative methodologies can in many circumstances prove to be the most effective. The mixed methods approach taken in this study incorporated what Creswell et al. (2003) describe as a triangulation design: a convergence model (see Figure 3.1.) that incorporates both qualitative and quantitative data sets. Both data sets were collected and compared at the same time then merged to provide a single interpretation.

Figure 3.1  
*A Convergence Model*



The purpose of collecting quantitative and qualitative data sets is to use each one to explore a different focus. In the present study, the qualitative data set prioritized describing the learners’ experiences with digital technology and feelings about using

SCMC for language learning, identifying similarities and differences in their impressions of the three task designs (opinion exchange, dictogloss, problem solving task), as well as identifying any strengths or weaknesses that using text chat or voice chat may have in certain classroom contexts. The qualitative data assisted in the analysis of the characteristics of each task design and communication mode. It also provided interpretations regarding the effectiveness of utilizing text chat and voice chat for task-based learning in the EFL classroom. The quantitative data set was used to identify the effect each mode had on the learners' capacity to notice new target language while engaged in each of the tasks. The data was collected concurrently to the qualitative data. The purpose of collecting both data sets was to develop a deeper understanding of how different communication modes can impact the processes involved in SLA as laid out in the cognitive-interactionist framework. Triangulation of the results allowed opportunities to examine these processes by comparing multiple sources of evidence.

### **3.3 PARTICIPANTS**

This study involved 146 students studying full time at a private university in Japan. All participants were students of the Literature Department, enrolled in one of two required first year English communication courses in either Semester 1 or Semester 2 of the 2019 academic year. The purpose of these English courses was to provide undergraduates with an opportunity to improve their basic conversation skills over the first year of their studies. The titles of the two courses were Communicative English I and Communicative English II. These courses were designed as a two-part series to be taken consecutively; 15 weeks per semester, 30 weeks in total, 45 classroom hours per year.

Of the 146 participants in the study, 139 of them were native Japanese speakers, and 7 others were either Chinese or Korean international exchange students. 143 of the participants were first year undergraduates and the remaining 3 were third year students. As passing both Communicative English I and Communicative English II were prerequisites for graduation, it was not uncommon for one or two older students to also be registered to the courses. This was usually because such students have either failed one of the courses previously or have transferred to the university in the second or third year of their studies.

The average age of the participants in the study was 18 years of age. All had at least six years' experience studying English at junior high school and high school prior to entering university. Upon entering, all first-year undergraduates are required to take the Test of English for International Communication (TOEIC) to gauge their proficiency levels. The average score for first year students in the Literature Department in 2019 was 414.65 out of 990. As a result, the average participant in the study was classified as an upper beginner or a high level A2 on the Common European Framework of Reference for Languages (CERF) as indicated by the Educational Testing Service (2019).

At the campus where the study took place, there were 26 Communicative English classes that were taught by three semi-permanent and three part-time native English speaking instructors. Each class usually averaged between 25 to 32 students. The classes were taught using a common textbook; the first six units being taught in Semester 1 and the remaining six units being taught in Semester 2. Nonetheless, all



instructors had the freedom to teach the content and to assess the learners as they saw fit. At the beginning of the academic year, the students were randomly assigned to these classes per faculty. The classes were not streamed by proficiency. The students then stayed together as one group for the entire year. In Semester 2, the classes were exchanged between instructors.

Table 3.1 outlines the participant sample used for this study. The participants were all students of six Communicative English classes taught by one of the semi-permanent instructors at the university in either Semester 1 or Semester 2.

Table 3.1  
*Participant Sample Used in the Study*

Sub-Study 1				
Communicative English I - Semester 1				
Class times	Mon 2 <sup>nd</sup> period	Thurs 1 <sup>st</sup> period	Thurs 2 <sup>nd</sup> period	
Registered participants	23	26	22	71 total
No. of usable samples for data collection	14	20	19	53 total
Sub-Study 2				
Communicative English II - Semester 2				
Class times	Mon 2 <sup>nd</sup> period	Thurs 1 <sup>st</sup> period	Thurs 2 <sup>nd</sup> period	
Registered participants	23	28	24	75 total
No. of usable samples for data collection	19	15	19	53 total

For the treatment periods of each sub-study, the researcher took the place of the instructor and taught the classes. This equalled four lessons per class, covering a 4-week period; from Weeks 2 to 5 of the semester. Although the number of participants in the study totalled 146, the data of each participant could only be used if they had been present each week. Consequently, the actual number of usable samples was reduced to 106. Of the 106 samples, 104 were native Japanese speakers and two were

international exchange students. All of them were first year students, making for an ideal representation of an EFL classroom context that can be found at most Japanese universities.

### 3.4 DATA COLLECTION INSTRUMENTS

Data collection instruments included a pre-test, three immediate post-tests, a delayed post-test, a pre-questionnaire, a post-questionnaire, and post interviews. The tests were used to assess task-mode effectiveness through uptake of the targeted lexical items. The questionnaires and interviews were used to gain insight into the participants' perceptions of the tasks and how the communication mode used may have affected their opinions. Table 3.2 shows how the data collection instruments and analysis techniques addressed each research question. Quantitative data analysis instruments included descriptive statistics, *t*-tests, one-way ANOVA, and post hoc measures in the form of a Tukey (HSD). The majority of the tests, questionnaires, and interview questions were content specific based around the three tasks and two SCMC modes used in the study. One exception was the first 13 questions used in the pre-questionnaire. These questions were taken directly from a study by Son, Park, and Park (2017), as they were considered useful to gauge general digital literacies of language learners. These questions were used as a starting point for the data collection of this study. In the following sections, the pre-tests and post-tests are discussed, followed by the pre-questionnaire, post-questionnaire and interviews.

Table 3.2  
*Overview of the Association Between Data Collection, Analysis Techniques and the Research Questions*

Research questions	Data collection methods	Data analysis techniques
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(1) To what extent can uptake of new L2 input be affected by task design and communication mode?	Pre-tests, immediate post-tests, & delayed post-tests	Descriptive statistics, <i>t</i> -tests, one-way ANOVA, and post hoc measures
(2) To what extent do time allowances play a role?	Pre-tests, immediate post-tests, & delayed post-tests	Descriptive statistics, <i>t</i> -tests, one-way ANOVA, and post hoc measures
(3) To what extent do learner perceptions of tasks differ depending on the communication mode they use?	Pre-questionnaire, post-questionnaire, & interviews	Questionnaire results analysed to identify trends in perceptions of tasks and SCMC affordances. Identified trends used to select interview candidates.

### 3.4.1 PRE-TESTS AND POST-TESTS

An initial pre-test was included in the study: (1) to determine how many targeted lexical items the participants were already familiar with; (2) to gauge the lexical difficulty of each task; and (3) to be able to later compare the gain scores achieved by each participant. In accordance with the comprehensible input hypothesis (Krashen, 1982), the aim of the study was to expose the participants to L2 input slightly beyond their current stage of linguistic competence. The learners were randomly assigned to these English courses, so they could not all be expected to be at the same level of language proficiency. The researcher relied on his previous 3 years' experience teaching the Communicative English classes, as well as guidance from the courses' current instructors to select lexical items considered most appropriate for their level. In short, lexical items that were anticipated to be mostly unfamiliar to the participants but still common enough to be used in general discussions were chosen. As Krashen and Terrell (1983) argue, input of this nature ensures all learners have the best opportunity to receive at least some *i+1* input that is suitable to their current stage of linguistic competence.

Ten targeted lexical items were selected from the content of each task, translated into Japanese and then checked by a Japanese English professor working in the same faculty. Five additional lexical items, similar in spelling and pronunciation, were also included in the lists to act as distractors. This made a total of 30 targeted lexical items and 15 distractors for the pre-test and delayed post-test, which were also divided into 10 targeted language items and 5 distractors for each task's immediate post-test. The objective of each test was to match the Japanese translation with the correct English word or phrase. Testing was carried out using the quiz function on *Moodle* (<https://moodle.com/>), an online learning management system. The settings of the quiz function allowed time limits to be set and the test items to be presented in a random order each time a test was given (see Figure 3.2 for Moodle pre-test screen shot). Ten-minute time limits were imposed on the pre-test and delayed post-test (Appendix A), while three-minute limits were set for each of the immediate post-tests (Appendix B). To limit the amount of guesswork involved, instructions were given before each test for the participants to refrain from answering items they did not recognize.

Figure 3.2  
*Screenshot of Pre-Test on Moodle*



Two weeks prior to the study commencing, a separate group of first year students was asked to take the pre-test to gauge the level of difficulty of the targeted lexical items. The average score for the group was 14.5 out of 30 (see Appendix C for the results of the pilot pre-test). This score was considered to have demonstrated that the targeted items would be at a difficulty level suitable ( $i+1$ ) for most participants in the study. In Week 1, each group was given the pre-test. This was followed by an immediate post-test at the conclusion of each treatment in Weeks 2 to 4. Finally, in Week 6, the participants were administered the delayed post-test. Each time, the participants were asked to remove any worksheets from their desks and close their dictionaries before taking the tests. At no time were they allowed to speak during the administration of the test. If the participants required assistance, they were asked to raise their hands and wait quietly for the instructor to attend to them. Each participant's test was graded automatically, and their score was displayed on their screen once they pressed the submission button or the test timed out.

### **3.4.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE**

In blended language classroom studies (e.g., Gleason, 2013; Grgurovic, 2017; Payant & Bright, 2017; Zeng, 2017), questionnaires and surveys are frequently used as a tool for data collection to gauge student perceptions. Closed-ended questions are used to provide quantitative data by limiting answers to predetermined categories or scales while open-ended questions offer participants opportunities to answer freely, affording deeper, more personalized qualitative data (Creswell & Plano, 2011). The purpose of facilitating both a pre-questionnaire and a post-questionnaire in the study was in part to identify changes in the participants' attitudes about using SCMC tools for language learning before and after the treatments. Each questionnaire incorporated a series of

closed-ended and open-ended questions. Open-ended questions were used to prompt the participants to explain their responses to closed-ended questions and to provide reasons for, or to clarify, their feelings. Before commencing each questionnaire, the participants were instructed that there were no right or wrong answers and to answer each question as honestly as possible. As Dörnyei (2007) argues, utilizing open-ended questions in this fashion works particularly well, as it allows for a degree of direction regarding the information participants are asked to provide.

The structure of the two questionnaires divided questions into themes. Each theme covered a specific type of information that the researcher desired to elicit from the participants. Tanur (1994) recommends doing this to mitigate the risk that potentially flawed questions on their own can pose. In the pre-questionnaire (Appendix D), the first half focused on questions about the participants' digital literacies. The aim of Questions 1 to 7 was first to measure their willingness to embrace digital technologies and use them for learning. In Questions 8 to 13, the participants rated their own computer skills in such areas as typing and web searches. All questions were limited to closed-ended responses to be able to obtain a general overview of the participants' perceptions. In the second half of the questionnaire, Questions 14 to 23 were designed to include a series of closed-ended and open-ended responses. These questions focused specifically on gauging the level of familiarity the participants had with text chat and voice chat; the frequency with which they used them; how they felt online communication compared to f2f communication; and their attitudes towards text chat and voice chat being used for language learning purposes in the classroom.

To gauge any changes in the SCMC participants' perceptions after the treatments had concluded, issues regarding their willingness to use either text chat or voice chat for classroom learning and how similar they felt the online modes were to f2f communication were revisited in the post-questionnaires (Appendix E). The post-questionnaire created for the two SCMC groups was more comprehensive than the one administered to the f2f groups. Each SCMC group was required to provide feedback on either text chat or voice chat, as well as the task designs. The f2f groups were not required to provide feedback on face-to-face communication, so their post-questionnaire was limited to questions about the tasks only (Qs 4 to 7). All of the questions used in the questionnaires required both closed-ended and open-ended responses.

In the more comprehensive SCMC versions, Questions 1 to 3 focused on having the participants reflect on the mode's usability to converse with classmates in the classroom. These questions followed up from Questions 14, 15, and 19 that were initially posed in the pre-questionnaire. Questions 4 to 7 then asked the participants to select the task they felt was the most enjoyable, most distasteful, easiest, or most difficult, and to provide their reasons. After this, Questions 8 to 9 had the participants choose the tasks they felt were best carried out using text chat/voice chat (depending on which group they were in) or done face-to-face in the classroom. Finally, Questions 10 and 11 revisited Questions 21 to 23 from the pre-questionnaire (Question 21 was directed at text chat, Question 22 was directed at voice chat) to again ask how positive the SCMC participants were about using their allocated mode to practice English in the classroom, and whether they preferred it to practicing face-to-face (Question 23).

All of the questions were translated into Japanese by the researcher and checked by a Japanese English professor working in the same faculty. The questionnaires were then created on *Moodle* using the quiz function. The pre-questionnaire and post-questionnaires were carried out during class time. The participants were asked to write all of their responses to the open-ended questions in Japanese to ensure they could provide the most detailed account of their opinions in a timely manner. Upon submitting their answers, the links to the questionnaires on Moodle were closed and the data was uploaded and securely stored on to the researcher's password-protected computer.

### **3.4.3 INTERVIEWS**

After reviewing the immediate post-test and post-questionnaire results, two students were selected from each SCMC group to be interviewed, making a total of eight in total. In the interviews, the participants were asked to elaborate in English or Japanese on responses they had given in the questionnaires that were considered relevant to the research questions. A semi-structured approach was adopted to conduct the interviews. This approach is common in applied linguistics, in situations where researchers have a substantial overview of the issues at hand and are able to prepare open-ended questions that do not restrict their respondents to ready-made answers that can potentially limit the depth and breadth of their contributions (Dörnyei, 2007). The interviews were conducted with a generally guided approach, meaning the topics and issues were specified in advance, along with the sequencing and wording of the initial questions posed. However, during the interviews, follow-up and/or probing type questions were also asked, based on the individual's responses.



This interviewee sample represented 10% or more of the total SCMC participant population whose data was deemed acceptable for analysis. Typical case sampling was used in the selection process. This is a form of purposive sampling. Teddie and Tashakkori (2007) explain that it “involves selecting those cases that are the most typical, normal, or representative of the group of cases under consideration” (p. 176). Typical case sampling was useful to gain greater understanding about how the tasks were generally perceived by each group and how the SCMC mode effect possibly contributed to this perception. The participants’ closed-ended responses to the post-questionnaires were calculated and candidates were selected based on how representative their answers were. In a number of incidences the percentage of responses for more than one answer was virtually the same. Consequently, candidates that represented two common viewpoints were selected.

Seven general questions were created to commence each of the interviews (see Appendix F for interview questions). Questions 1 and 2 started by asking the participants how they felt about doing communicative English activities and the extent to which the SCMC modes compared to f2f communication. Questions 3 and 4 asked them to recall how they rated the difficulty of each task in the post-questionnaire and whether using text chat or voice chat made the tasks any easier or more challenging to complete. Question 5 followed this up by asking the participants to comment on some of their post-questionnaire statements. Finally, Questions 6 and 7 asked the interviewees how they felt about their immediate post-tests and which task’s targeted lexical items they focused on the most during the tasks. Once these initial questions had been answered, more personalized questions were asked to individuals about specific comments they had made.

Each interview took approximately 15 minutes and was recorded. Due to time constraints, the interviews were conducted with two participants from each group at the same time. Prior to each interview, the interviewees' post-questionnaire responses were scrutinized and notes were taken. The interviews were conducted in both English and Japanese to put the participants' minds at ease and to allow them to answer the questions with as much detail as possible. Throughout the interviews, notes of the participants' responses were recorded along with any thoughts that occurred to the researcher at the time. The notes taken during the interviews were then compiled onto a single Word document.

### **3.5 PROCEDURES**

In total, 6 sample groups were included in this study: 3 groups for the first round of data collection (Sub-Study 1) in Semester 1 and 3 groups for the second round (Sub-Study 2) in Semester 2. For each sub-study, one group acted as the control group, carrying out the tasks face-to-face while the other two used either text chat or voice chat. The classes were shifted to a media centre for the 4-week periods the treatments were carried out. The learning management system *Moodle* was used to collect both sets of qualitative and quantitative data. A Moodle page was created for each class and all translated versions of the pre-questionnaire and post-questionnaire, and the pre-test, immediate post-test, and delayed post-test were then added. Text chat rooms were set up on the Moodle pages of the groups selected to communicate using an SCMC tool. For voice chat, the free version of the software *Chat&Messenger* (<https://chat-messenger.com/en/>) 4.04.43 was installed on the computers in the classrooms. This software allowed the computers to be networked through the university server which

offered a higher level of security than could be provided using other publicly available applications.

In Week 1 of each sub-study, first, an overview of the study was presented to the classes and ethical agreements were collected. The participants were next introduced to text chat and voice chat by having them carry out two short pair-work activities: a checking information task and an information gap task (see Appendix G for details of the tasks). Each group was then allocated a specific communication mode to use for the subsequent three weeks (f2f, text chat, or voice chat). Afterwards, the participants were told to register to their group’s Moodle site. Finally, all participants carried out the pre-questionnaire and pre-test.

In Weeks 2 to 4, each group carried out the three treatments - the opinion exchange, the dictogloss, and the problem solving task (Appendices H, I, and J) - in a random order. Table 3.3 outlines each task design using the framework developed by Ellis (2003). All three tasks were designed to be convergent in nature, meaning the participants were expected to work interdependently to achieve the objectives.

Table 3.3  
*Tasks in the Study*

	Dictogloss	Problem Solving	Opinion Exchange
1. Goal	To paraphrase information	To work out the times and dates of events	To rank leadership qualities - most to least important
2. Input	A newspaper article	A dialogue between two students	A list of adjectives
3. Conditions	Shared information/ Convergent	Shared information/ Convergent	Shared information/ Convergent
4. Procedures	Pair work/ Collaborative	Pair work/ Collaborative	Pair work/ Collaborative

5. Predicted outcome	Co-constructed paraphrase of news article.	Work together to fill in gaps of dialogue. Come to agreement on date of events.	Come to an agreement on list of leadership qualities - least to most important.
6. Process	Identify key points, order them, use conjunctions, clauses to construct sentences.	Use phrasal verbs to complete dialogue, process input, fill in calendar.	Explain reasons, debate ideas, make compromises.

Drawing on previous TBLT design proposals (e.g., Lee, 2000; Willis, 1996), the tasks were broken down into three stages: (1) the pre-task phase; (2) the main-task phase; and (3) the post-task phase. Ellis (2018) describes these three stages as: the activities students and teachers perform preceding the main task (pre-task phase); the actual performance of the task (main-task phase); and any activities engaged in subsequent to the main task (post-task phase). Each of the tasks used in the study consisted of 4 or 5 steps. Table 3.4 illustrates how these steps were divided into the pre-task phase, main-task phase, and post-task phase.

Table 3.4  
*Task Phases*

	Dictogloss	Problem Solving	Opinion Exchange
Pre-task	- Warm-up discussion - Listen to news story once and number target language items in order they are heard.	- Warm-up discussion - Practice saying target language phrasal verbs.	- Warm-up discussion - Match the target language with Japanese translations.
Main task	- Listen to news story twice, take notes. - Share information with partner. - Paraphrase news story with partner.	- Read dialogue, use targeted language items to fill in the gaps. - Use the information from dialogue to fill in dates on calendar.	- Divide targeted language items into two groups –most important / least important leadership qualities. - Share list with partner. - Make up new list with partner
Post-task	- Compare paraphrase with another classmate. - Final discussion	- Compare answers with another classmate. - Write three personal statements using phrasal verbs.	- Discuss new list with another classmate.

At the conclusion of each treatment, the participants were given an immediate post-test of the 10 targeted lexical items introduced that day. These test results were then compared to the pre-test data to determine the extent task-mode effects had on each group's gain score average. In Week 5, the participants completed the post-questionnaire. In Week 6, they took the delayed post-test that once again included all 30 targeted language items (plus the 15 distractors). The delayed post-test was administered under the same conditions as the pre-test. After that, key qualitative and quantitative results were considered and two participants from each of the SCMC groups were selected for the interviews. Table 3.5 provides an overview of the weekly schedule of each sub-study.

Table 3.5  
*Overview of the Two Sub-Studies*

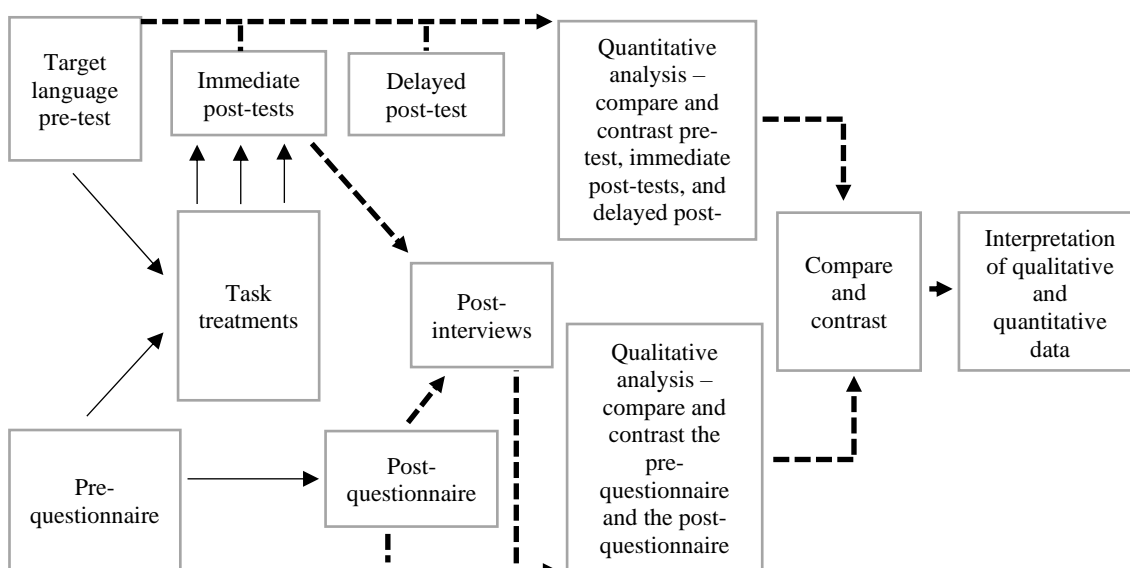
	Sub-Study 1 (April–May 2019)			Sub-Study 2 (Sept – Oct 2019)		
	TC	VC	F2F	TC	VC	F2F
Week 1	Pre-questionnaire, Pre-test			Pre-questionnaire, Pre-test		
Week 2	Dictogloss	Opinion exchange	Problem solving	Problem solving	Opinion exchange	Dictogloss
Week 3	Opinion exchange	Problem solving	Dictogloss	Opinion exchange	Dictogloss	Problem solving
Week 4	Problem solving	Dictogloss	Opinion exchange	Dictogloss	Problem solving	Opinion exchange
Week 5	Post-questionnaire			Post-questionnaire		
Week 6	Delayed post-test			Delayed post-test		
Week 7	Interviews with selected SCMC candidates			Interviews with selected SCMC candidates		

### 3.6 DATA ANALYSIS

Quantitative and qualitative data was collected and compared in two stages. In Stage 1, the data from the pre-test, immediate post-tests and post-questionnaires were analysed and interview participants were selected. In Stage 2, a more extensive analysis of all data sets, including the pre-test, pre-questionnaire, immediate post-tests,

delayed post-tests, and interviews, was done to identify any significant differences or patterns in the results. Figure 3.3 presents the process used to collect, compare, and analyse the data. This process was done for both sub-studies in Semester 1 and Semester 2. The results of both sub-studies were compared, contrasted, and then merged together to ascertain the overall significance of the data.

Figure 3.3.  
*Triangulation of Data Collection and Analysis*



In Stage 1 of the analysis, the data sets of each group’s pre-test and immediate post-tests were compared. Paired *t*-tests were used to determine if uptake of the targeted language items had been significant after each treatment. One-way ANOVA analysis was then used to detect any substantial differences in the results of all three groups. If any were found, post hoc measures in the form of a Tukey (HSD) analysis were employed to pinpoint which groups were involved. The closed-ended responses in the post-questionnaire were also broken down into percentages and compiled. Common responses from each group were then identified and compared. The participants’ open-

ended answers were also examined to isolate any commonalities or dissimilarities in the feedback from each group.

In Stage 2, descriptive statistics were used to measure changes in each group's pre-test, immediate post-tests (scores combined), and delayed post-test results. The statistics included measurements of central tendencies (mean; median; mode), and variability (standard deviation; maximum and minimum values). Paired *t*-tests were again used to compare the pre-test and delayed post-test results of each group. An analysis of the pre-questionnaire was done by merging the three groups' data sets together to gauge the participants' overall feelings about their own digital proficiency levels, as well as about SCMC, and using text chat or voice chat in the EFL classroom. Moreover, the two SCMC groups' responses in the pre-questionnaire were compared with their feedback in the post-questionnaire to determine how much their perspectives had changed regarding the use of these modes for L2 learning.

Finally, the analysis of the interviews was done by organizing the participants' comments into two groups: (a) those relating to communication mode, and (b) those relating to task design. These categories were further divided into positive and negative feedback. The researcher's notes were reflected on, and the recordings were played back numerous times to decipher the main meaning of each response. The comments given were then categorised and compared with other feedback given in the post-questionnaires. The process of analysing the interview data was carried out separately in both sub-studies. The data sets from both Sub-Study 1 and Sub-Study 2 were then compared to identify common themes or inconsistencies between the two. Any themes or inconsistencies that were detected were then compared with the other quantitative

and qualitative data sets of both sub-studies to determine the extent to which general trends or variations existed between the two.

### **3.7 ETHICAL CONSIDERATIONS**

There were a number of ethical issues pertaining to this study, including: (a) informed consent; (b) the consequences of partaking in the study; (c) the power relationship between the researcher and the students; (d) the participants' privacy; (e) security of the data; and (e) the benefits to the participants. Prior to commencing, ethical approval was applied for and given by the University of Southern Queensland (No. H19REA012). Permission was then received from the teacher normally charged with instructing the classes as well as the head of the Faculty of Letters to proceed with the project. In Week 1 of Semesters 1 and 2, students were informed that a new instructor would take over the teaching duties of their classes for the following four weeks. In Week 2, the researcher introduced himself to the students and provided them with an information sheet and a consent form. All aspects of the study were then disclosed before the participants were asked if they would be willing to provide consent for their participation. The information that was conveyed included: the purpose of the study; its goals; the process involved; the role of participants; data collection and storage methods; steps to ensure confidentiality; and the distribution of results. The researcher then answered any questions the students had before informing them that any test results or questionnaire feedback obtained during the data collection period would have no bearing on their final grades for the class. In accordance with the course guidelines, it was required that all students attend each week and participate in the lessons. However, anyone who did not wish to be a part of the study was allowed to excuse themselves from doing any of the tests, questionnaires, or interviews. The



students who were willing to participate provided written consent and registered themselves to their group's Moodle site using their student ID, password and the access key provided to them.

During the two sub-studies' data collection periods, no potential risk to the participants could be identified. The participants' data on Moodle was only accessible to the researcher and other registered members of each group. At no time were group members able to specifically identify the results of any other member. After each test and questionnaire was completed, the link to the Moodle sites were closed, making the data only accessible to the researcher. Both the pre-questionnaire and post-questionnaire were deidentified by deleting all of the participants' names and student numbers before being given to a 4<sup>th</sup> year English major to translate into English.

Prior to starting the data collection period, nearly all participants stated that they were not familiar with task-based learning. As a consequence of their involvement, the students were informed that the study would provide them with an opportunity to experience an interactive approach to English learning that perhaps they had not experienced before. After completion of the pre-questionnaire and post-questionnaire, the participants were given the opportunity to review the summarized results of their classmates. This chance meant that they could compare their own feedback with that of others in the group. These factors were considered the consequential benefits of the participants' involvement in the study.

### **3.8 SUMMARY**

The aims of this study were to find out how SCMC technology can be used to benefit learning in EFL classroom contexts. It investigated the effectiveness of text chat and voice chat to facilitate uptake as the participants engaged in three different types of tasks. Of the 146 participants involved in the study, the data of 108 was able to be used for analysis. These participants were randomly divided into 6 communicative English classes. All of these classes were held in 2019 - three in Semester 1 and three in Semester 2 of the academic year. Data collection for each sub-study occurred over a 6-week period, 12 weeks in total. A mixed methods approach was taken to collect and analyse data. Quantitative data was collected through a pre-test, three immediate post-tests, and a delayed post-test to measure task-mode effects on the uptake of the targeted lexical items. Qualitative data was collected through a pre-questionnaire, post-questionnaire, and interviews. The feedback provided was used to gain insight into the participants' perspectives about their own digital literacies, SCMC technology, using text chat and voice chat in the classroom, and how the two online modes impacted their task-based language learning experiences.

## **CHAPTER 4**

### **RESULTS**

#### **4.1 OVERVIEW**

This chapter presents the quantitative and qualitative data in three stages. First, the data from each of the 6 groups (i.e., Face-to-Face Group 1, Face-to-Face Group 2, Text Chat Group 1, Text Chat Group 2, Voice Chat Group 1, Voice Chat Group 2) are presented separately (Stage 1), then as part of either Sub-Study 1 or Sub-Study 2 (Stage 2), before being merged and analysed as a whole (Stage 3). The purpose of presenting each group's data separately first is to: gauge the consistency of the results between groups that used the same communication mode; and identify similarities or differences between their learning achievements and impressions of the tasks and modes. In Stage 1, the results of the pre-test, three immediate post-tests, and delayed post-test are reported, followed by the pre-questionnaire and post-questionnaire. For SCMC groups, feedback from selected interviewees is also detailed. Then, the quantitative and qualitative data for each group is triangulated to compare the findings across each communication mode and task design.

In Stage 2, the average gain scores of the three groups in each sub-study are presented. The averages made between the pre-test, the immediate post-tests (totals combined), and the delayed post-test are compared, as well as the separate averages for the targeted language used in each task. The participants' responses to the post-questionnaire and their interview feedback are then also compared to illustrate any important commonalities or discrepancies regarding their general impressions or experiences. Stage 3 then merges the pre-questionnaire data of all 6 groups to present an overall

picture of the 106 participants' impressions about their digital literacy skills and preliminary feelings about SCMC use for language learning in the classroom. The data sets from the 2 groups that used the same communication mode in Sub-Study 1 and Sub-Study 2 are then combined and compared. The purpose of this analysis approach was to identify similarities and differences in the way task design and communication mode affected L2 uptake and the learners' perceptions of the tasks.

## **4.2 RESULTS FOR FACE-TO-FACE GROUP 1**

### **4.2.1 PRE-TEST AND POST-TEST RESULTS**

F2F Group 1 started with an average pre-test result of 15.70 out of 30 (see Figure 4.1). This average increased to 26.65 when combining the three immediate post-test results (3 x 10). The average gain score equalled + 10.95 points per participant. In the delayed post-test, the average result decreased to 21.1 out of 30. However, an average gain score of + 4.9 was still maintained over the pre-test results. The results of paired *t*-tests between F2F Group 1's pre-test, immediate post-test (combined), and delayed post-test scores (Table 4.1) show that gains made in both post-tests were significant ( $t = -17.60, df = 19, p = < 0.0001$ ;  $t = -7.21, df = 19, p = < 0.0001$ ).

Figure 4.1

Face-to-Face Group 1: Overall Scores for the Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test

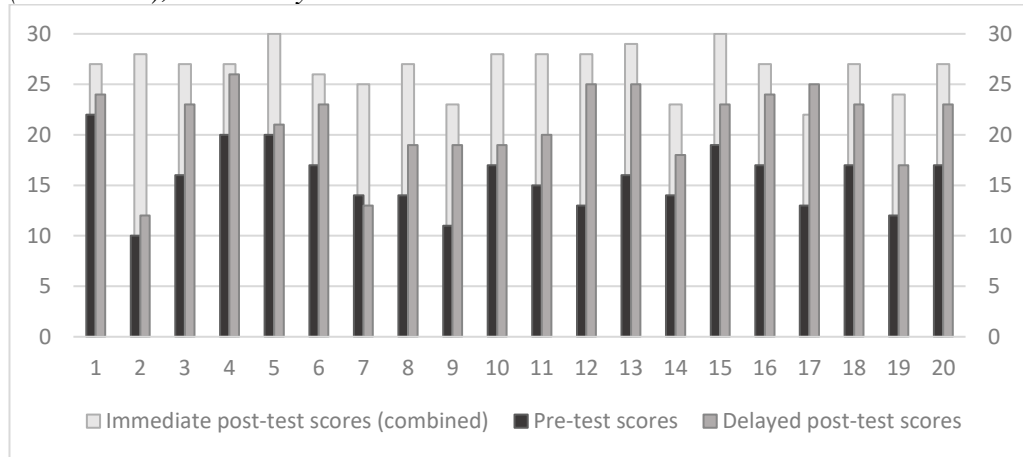


Table 4.1

Face-to-Face Group 1: Paired t-Test Results for Total Score Comparison of the Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test

Pre-test			Immediate post-tests (combined)			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
15.70	3.14	0.70	26.65	2.23	0.49	20	-17.60	19	< 0.0001

Pre-test			Delayed post-test			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
147	14.72	0.70	21.10	3.93	0.87	20	-7.21	19	< 0.0001

By dividing the pre-test and delayed post-test results up into three separate scores, the gain score average of each task’s targeted lexical items could be ascertained. Comparisons between the pre-test and immediate post-test results saw an average increase from: 7.8 to 9.9 for the dictogloss; 5.45 to 9.6 for the opinion exchange; and 2.45 to 7.15 for the problem solving task (see Figure 4.2). The gain score average increased by: + 2.1 for the dictogloss; + 4.15 for the opinion exchange; and + 4.7 for

the problem solving task. In the delayed post-test results, these gain score averages diminished, but still remained positive: Dictogloss + 0.8; Opinion Exchange + 2.55; and Problem Solving + 1.85. As Table 4.2 illustrates, a paired *t*-test analysis of the pre-test and delayed post-test results showed a significant positive effect on uptake was maintained for all 3 sets of targeted language items ( $t = -3.10, df = 19, p = < 0.006$ ;  $t = -5.92, df = 19, p = < 0.0003$ ;  $t = -4.35, df = 19, p = < 0.0001$ ).

Figure 4.2

*Face-to-Face Group 1: Pre-Test, Immediate Post-Test, and Delayed Post-Test Score Averages for Targeted Lexical Items per Task*

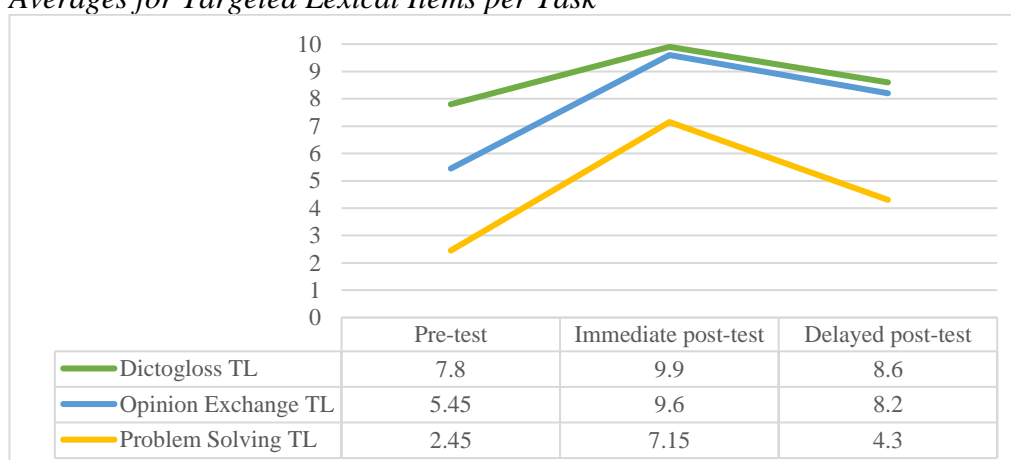


Table 4.2

*Face-to-Face Group 1: Paired t-Test Results for Comparison of Pre-Test and Delayed Post-Test Scores per Task*

Pre-dictogloss			Delayed post-dictogloss			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
7.8	1.54	0.34	8.6	1.66	0.37	20	-3.10	19	< 0.006
Pre-opinion exchange			Delayed post-opinion exchange			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
5.45	1.57	0.35	8.2	1.67	0.35	20	-5.92	19	< 0.0003

Pre-problem solving			Delayed post-problem solving			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
2.45	0.82	0.18	4.3	1.8	0.40	20	-4.35	19	< 0.0001

#### 4.2.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE RESULTS

The participants' initial feedback from the pre-questionnaire (Table 4.3) indicated that there was an almost even divide between those who had positive impressions of digital technology (Yes, very much; Yes, somewhat) and those who were unsure or held negative views (Not sure; No, not really; No, not at all). The percentage of participants who stated they were somewhat or very comfortable using digital devices and willing to learn more about digital technology was 50% and 55% consecutively. On the other hand, 55% claimed they were unsure if digital tools and resources could be used to enhance learning. When asked if they felt it was important to improve their digital literacy, 17 participants (85%) responded positively, and 11 participants (55%) stated that they thought training in technology-enhanced language learning should be included in education programs. Regarding the participants' own computer skills, the majority of respondents answered negative (Poor; Very poor) for all categories except their ability to carry out web searches.

Table 4.3

*Face-to-Face Group 1: Participants' Results for the Pre-Questionnaire*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	3 (15%)	8 (40%)	3 (15%)	3 (15%)	3 (15%)
Comfortable using digital devices.	1 (5%)	9 (45%)	7 (35%)	2 (10%)	1 (5%)
Willingness to learn more about digital technologies.	4 (20%)	7 (35%)	8 (40%)	1 (5%)	0 (0%)
Feel behind fellow students in use of digital technologies.	4 (20%)	7 (35%)	3 (15%)	4 (20%)	2 (10%)

Important to improve digital fluency.	7 (35%)	10 (50%)	2 (10%)	0 (0%)	1 (5%)
Learning can be enhanced by digital tools and resources.	3 (15%)	6 (30%)	11 (55%)	0 (0%)	0 (0%)
Training in technology-enhanced language learning should be included in language education programs.	2 (10%)	9 (45%)	7 (35%)	2 (10%)	0 (0%)
Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	0 (0%)	2 (10%)	5 (25%)	9 (45%)	4 (20%)
English typing skills	0 (0%)	1 (5%)	3 (15%)	7 (35%)	9 (45%)
Web search skills	2 (10%)	2 (10%)	8 (40%)	6 (30%)	2 (10%)
Computer literacy skills	1 (5%)	1 (5%)	5 (25%)	9 (45%)	4 (20%)
Internet literacy skills	2 (10%)	1 (5%)	4 (20%)	10 (50%)	3 (15%)
Digital literacy skills	1 (5%)	2 (10%)	6 (30%)	9 (45%)	2 (10%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	2 (10%)	11 (55%)	4 (20%)	3 (15%)	0 (0%)
Enjoy text chatting	1 (5%)	9 (45%)	7 (35%)	2 (10%)	1 (5%)
Enjoy talking online	2 (10%)	5 (25%)	7 (35%)	4 (20%)	2 (10%)
	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	10 (50%)	4 (20%)	1 (5%)	5 (25%)	0 (0%)
Verbal SCMC usage	2 (10%)	2 (10%)	5 (25%)	11 (50%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	1 (5%)	8 (40%)	1 (5%)	9 (45%)	1 (5%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all
Using SCMC to practice English in the classroom is good	4 (20%)	10 (50%)	5 (25%)	1 (5%)	0 (0%)
Using text chat to practice English sometimes in the classroom is good	2 (10%)	15 (75%)	2 (10%)	1 (5%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	1 (5%)	15 (75%)	2 (10%)	2 (10%)	0 (0%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	12 (60%)	5 (25%)	3 (15%)		

Note. N=20.

The participants' impressions of SCMC were also split. Although 13 participants (65%) said they were comfortable using online communication, half of the group also stated they were either unsure if they liked text chatting or disliked it. There was an



even stronger negative response to using online speaking apps, with a total of 13 participants (65%) saying they were unsure if they liked them or did not like them. For text chat, 14 participants (70%) said they used it daily or weekly, while only 4 (20%) stated the same for voice chat technology. When asked whether they felt communicating online was similar or different to face-to-face communication, there was again, an almost even divide between those who felt it was somewhat similar (50%) and those who felt it was somewhat different (45%). With regard to the prospect of using online communication to practice English in a classroom situation, 14 participants (70%) responded positively, with 17 (85%) stating text chat would be somewhat or very beneficial to use and 16 (80%) stating the same for voice chat.

Table 4.4  
*Face-to-Face Group 1: Participants' Results for the Post-Questionnaire*

Face-to-face class feedback	Dictogloss	Opinion exchange	Problem solving
Most enjoyable task	5 (25%)	13 (65%)	2 (10%)
Most disliked task	8 (40%)	6 (30%)	6 (30%)
Easiest task	8 (40%)	9 (45%)	3 (15%)
Most difficult task	5 (25%)	9 (45%)	6 (30%)

Note. N=20.

In response to the post-questionnaire (see Table 4.4), F2F Group 1 largely regarded the opinion exchange as being the most enjoyable task (65%) of the three. Three participants commented that:

*The theme was easy to talk about. (F2F 1 – S2)*

*I could hear different ideas and it made me think more deeply. (F2F 1 – S6)*

*Both telling my ideas and trying to understand my partner was difficult but the process was enjoyable. (F2F 1 – S3)*

Regarding the task disliked the most, there was a fairly even divide between the participants' selections: 8 participants (40%) for dictogloss; 6 participants (30%) for

the opinion exchange; and 6 participants (30%) for the problem solving task. Both the dictogloss (40%) and the opinion exchange (45%) were rated easier though than the problem solving task (15%). For the dictogloss, two participants commented that:

*We just talked about the news so all I had to do was listen carefully. (F2F 1 – S20)*

*I did not know many words but it was easy to guess from the context; my partner was good. (F2F 1 – S10)*

For the opinion exchange, three participants mentioned:

*The theme was easy to understand. (F2F 1 – S5)*

*I just had to match my ideas with my partner so it was simple. (F2F 1 – S4)*

*If I did not understand we just talked about it, so it was not difficult. (F2F 1 – S13)*

At the same time, 45% also rated the opinion exchange as the most difficult task, higher than the problem solving task, which was second at 30%. Three reasons for this were as follows:

*The theme was abstract so telling my ideas was difficult. (F2F 1 – S10)*

*I could not express myself well in this task. (F2F 1 – S11)*

*I had a completely different idea to my partner's and it was difficult when I could not come up with the words to express myself. (F2F 1 – S18)*

#### **4.2.3 TRIANGULATION OF RESULTS**

The quantitative data shows that each task had a significant effect on uptake of the targeted language items, both immediately after the treatments and after the subsequent two to four weeks that led to the delayed post-test. The delayed gain scores indicate uptake of the targeted lexical items was best maintained in the opinion exchange (+ 2.55), followed by the problem solving task (+ 1.85), and the dictogloss

(+ 0.8). The results of the pre-test show that the group started off already being very familiar with many of the targeted language items presented in the dictogloss. The participants' inability to maintain a higher delayed gain score average, however, can also be linked to the participants' impressions of the task. Although the dictogloss was selected by a large number in the group as the easiest task, similar to the opinion exchange, it was also selected as the most disliked of the three. Out of the 8 reasons given, 5 focused on the difficulties experienced during the listening section. Three participants stated that:

*Listening precisely was the key but it was so hard.* (F2F 1 – S1)

*Listening and making a summary was difficult.* (F2F 1 – S3)

*It was hard to catch everything in the listening.* (F2F 1 – S5)

The need to grasp the content and then paraphrase it in a limited amount of time appears to have detracted from the group's capacity or willingness to pay serious attention to the targeted input. Consequently, their ability to recall the lexical items in the delayed post-test may have been diminished.

On the other hand, even though the opinion exchange was rated as the most difficult task, it was also rated as the most enjoyable by a wide margin. The difficulties that the participants noted mainly expressed their frustrations at not being able to express themselves properly or not understanding what their partners were trying to say. Regardless though, the group saw the challenge as a mostly positive one. Eight participants commented that the process was enjoyable, trying to understand each other's thinking was fun, and that these discussions felt open and natural.

### 4.3 RESULTS FOR FACE-TO-FACE GROUP 2

#### 4.3.1 PRE-TEST AND POST-TEST RESULTS

F2F Group 2 started with a pre-test score average of 14.05 out of 30. Calculating the combined results of the 3 immediate post-tests saw this average increase to 24.47 out of 30 (see Figure 4.3). This equalled an average gain score of + 10.42 per participant. In the delayed post-test, the average score decreased to 18.85 out of 30, minus 5.58 points from the combined immediate post-test totals. However, a gain score average of + 4.84 points was still maintained over the pre-test results. Paired *t*-tests show both score gains to be significant ( $t = -13.27, df = 18, p = < 0.0001$ ;  $t = -8.44, df = 18, p = < 0.0001$ ) (see Table 4.5).

Figure 4.3

*Face-to-Face Group 2: Overall Scores for the Pre-Test, Immediate Post-Test (combined), and Delayed Post-Test*

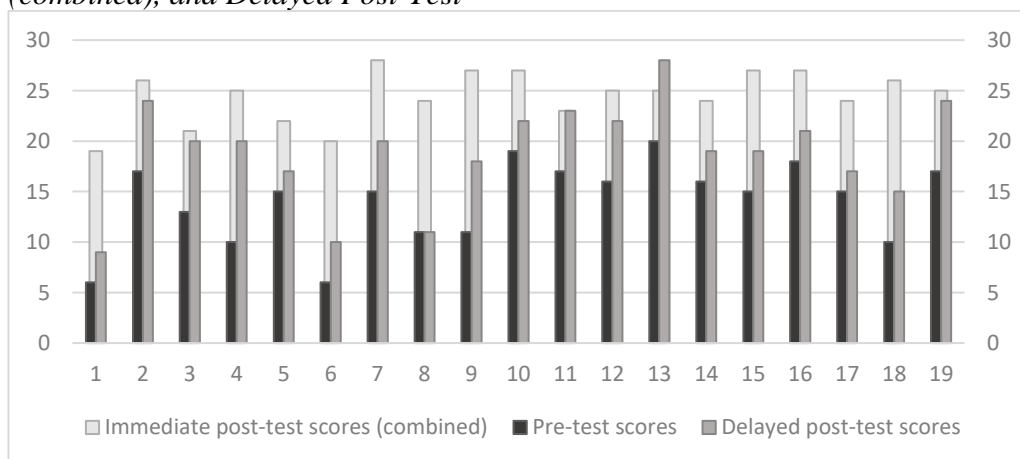


Table 4.5

*Face-to-Face Group 2: Paired t-Test Results for Total Score Comparison of Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test*

Pre-test	Immediate post-tests (combined)
----------	---------------------------------

M	SD	SEM	M	SD	SEM	n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
14.05	4.04	0.92	24.47	2.52	0.52	19	-13.27	18	< 0.0001

Pre-test			Delayed post-test			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				
14.05	4.04	0.92	18.85	4.95	0.52	19	-8.44	18	< 0.0001

Dividing the pre-test results up into three separate scores per task and comparing them to the immediate post-test results showed that the average score increased from: 7.05 to 9.58 for the dictogloss; 5 to 9.63 for the opinion exchange; and 2 to 5.26 for the problem solving task (see Figure 4.4). This equalled an average gain score of: + 2.52 for the dictogloss; + 4.63 for the opinion exchange; and + 3.26 for the problem solving task. Again, dividing the delayed post-test results up into three separate scores and comparing them to the pre-test result showed the gains made for each task decreased but remained positive at: + 0.89 for the dictogloss; + 2.73 for the opinion exchange; and + 1.31 for the problem solving task. The paired *t*-test analysis shown in Table 4.6 demonstrates the positive learning effect of all three tasks remained significant in the delayed post-test results ( $t = -3.03, df = 18, p = < 0.007$ ;  $t = -7.04, df = 18, p = < 0.0001$ ;  $t = -3.18, df = 18, p = < 0.005$ ).

Figure 4.4

Face-to-Face Group 2: Pre-Test, Immediate Post-Test, and Delayed Post-Test Score Averages for Targeted Lexical Items per Task

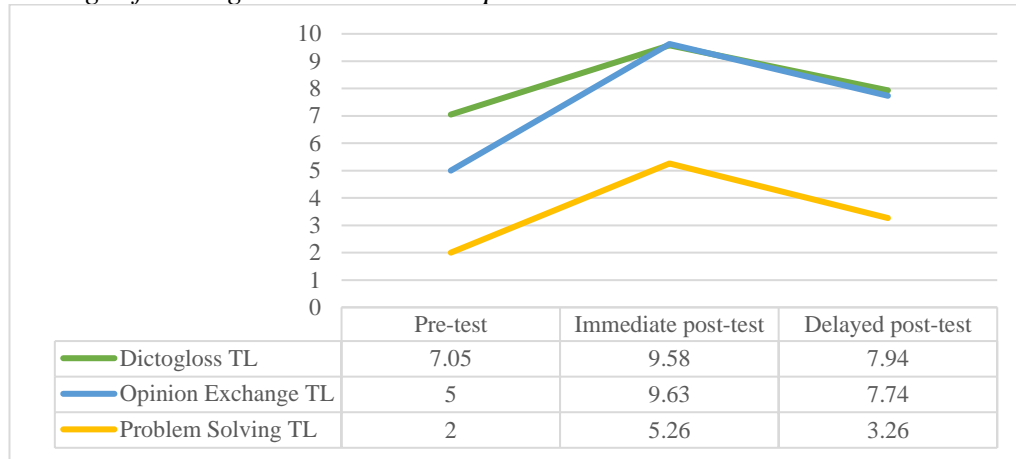


Table 4.6

Face-to-Face Group 2: Paired t-Test Results for Comparison of Pre-Test and Delayed Post-Test Scores per Task

Pre-dictogloss			Delayed post-dictogloss			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
7.05	1.77	0.40	7.94	1.95	0.44	19	-3.03	18	< 0.007
Pre-opinion exchange			Delayed post-opinion exchange			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
5	1.94	0.44	7.74	2.05	0.47	19	-7.04	18	< 0.0001
Pre-problem solving			Delayed post-problem solving			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
2	1.1	0.25	3.26	1.79	0.41	19	-3.18	18	< 0.005

### 4.3.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE RESULTS

Table 4.7 shows that F2F Group 2 had a generally positive attitude about digital technology. Although 11 participants (58%) stated they were unsure or not really

comfortable using such devices, 17 (89%) said they were somewhat willing or very willing to learn more about digital technology. When asked if improving their digital fluency was important, 9 (47%) responded somewhat and 10 (53%) responded very much. Regarding the capacity of digital tools and resources to enhance learning or the need for training in technology-enhanced language programs, 11 participants (58%) answered positively for both (42% somewhat; 16% very much). Looking at the participants' computer skills, 16 (84%) claimed that their English typing was poor (47%) or very poor (37%). Another 14 (74%) also stated that their general computer literacy was poor. All other categories received moderately positive responses with 'okay', being the most common response.

Table 4.7

*Face-to-Face Group 2: Participants' Results for the Pre-Questionnaire*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	1 (5%)	9 (47%)	5 (26%)	3 (16%)	1 (5%)
Comfortable using digital devices.	1 (5%)	7 (37%)	7 (37%)	4 (21%)	0 (0%)
Willingness to learn more about digital technologies.	4 (21%)	13 (68%)	1 (5%)	1 (5%)	0 (0%)
Feel behind fellow students in use of digital technologies.	4 (21%)	6 (32%)	7 (37%)	2 (10%)	0 (0%)
Important to improve digital fluency.	10 (53%)	9 (47%)	0 (0%)	0 (0%)	0 (0%)
Learning can be enhanced by digital tools and resources.	3 (16%)	8 (42%)	6 (32%)	2 (10%)	0 (0%)
Training in technology-enhanced language learning should be included in language education programs.	3 (16%)	8 (42%)	6 (32%)	2 (10%)	0 (0%)
Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	0 (0%)	0 (0%)	9 (47%)	7 (37%)	3 (16%)
English typing skills	0 (0%)	0 (0%)	3 (16%)	9 (47%)	7 (37%)
Web search skills	1 (5%)	3 (16%)	12 (63%)	3 (16%)	0 (0%)
Computer literacy skills	0 (0%)	0 (0%)	5 (26%)	14 (74%)	0 (0%)
Internet literacy skills	0 (0%)	2 (11%)	10 (52%)	7 (37%)	0 (0%)
Digital literacy skills	0 (0%)	2 (11%)	9 (47%)	8 (42%)	0 (0%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	1 (5%)	7 (37%)	8 (42%)	3 (16%)	0 (0%)
Enjoy text chatting	2 (10%)	9 (47%)	4 (21%)	2 (10%)	2 (10%)
Enjoy talking online	0 (0%)	5 (26%)	3 (16%)	6 (32%)	5 (26%)

	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	12 (63%)	0 (0%)	1 (5%)	6 (32%)	0 (0%)
Verbal SCMC usage	0 (0%)	6 (32%)	4 (21%)	9 (47%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	0 (0%)	6 (32%)	1 (5%)	8 (42%)	4 (21%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all
Using SCMC to practice English in the classroom is good	1 (5%)	7 (37%)	10 (53%)	1 (5%)	0 (0%)
Using text chat to practice English sometimes in the classroom is good	1 (5%)	11 (58%)	6 (32%)	1 (5%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	1 (5%)	8 (42%)	7 (36%)	3 (16%)	0 (0%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	13 (68%)	4 (21%)	2 (10%)		

Note. N=19.

Regarding SCMC, the majority of participants (58%) stated they were not sure if they were comfortable using such communication modes (42%) or were not really comfortable using them (16%). Nine participants (47%) stated that they somewhat enjoyed using text chat while another 2 (10%) said that they enjoyed it a lot. This corresponded to the mode's high level of use, with 12 (63%) claiming to use it daily. About speaking online, 6 participants (32%) stated that they did not really like it and 5 (26%) said that they did not like it at all. Online voice communication was most commonly engaged in only once a month (47%). As for using text chat or voice chat to practice in the classroom, there was a close divide between those who felt both modes could be somewhat beneficial and those who were unsure.



Table 4.8

*Face-to-Face Group 2: Participants' Results for the Post-Questionnaire*

Face-to-face class feedback	Dictogloss	Opinion exchange	Problem solving
Most enjoyable task	4 (21%)	12 (63%)	3 (16%)
Most disliked task	8 (42%)	4 (21%)	7 (37%)
Easiest task	7 (37%)	7 (37%)	5 (26%)
Most difficult task	4 (21%)	9 (47%)	6 (32%)

Note. N=19.

Reviewing the data from the post-questionnaire, F2F Group 2 responded in a similar fashion to F2F Group 1 (see Table 4.8). The opinion exchange was again rated as the most enjoyable task at 63%. Four reasons given were as follows:

*My partner had different ideas to me. It was fun to know what other people think. (F2F 2 – S3)*

*It was fun to share our opinions. (F2F 2 – S4)*

*My partner talked a lot and the conversation worked well. (F2F 2 – S10)*

*I got a lot of information, not just connected to English. (F2F 2 – S13)*

Both the dictogloss (42%) and problem solving task (37%) were rated as less likeable.

For the dictogloss, three participants commented that:

*It took time to do it and the content was hard. (F2F 2 – S14)*

*I am bad at paraphrasing. (F2F 2 – S11)*

*It was hard to understand. (F2F 2 – S19)*

For problem solving, three participants remarked that:

*The conversation did not continue much because of my lack of vocabulary. (F2F 2 – S3)*

*I felt it was too difficult to do in English. (F2F 2 – S1)*

*The conversation was hard to continue. (F2F 2 – S5)*

Regarding which task was the easiest, the percentage distribution was relatively even at 37% for both the dictogloss and opinion exchange and 26% for the problem solving task. As with F2F Group 1, the opinion exchange was rated as the most difficult. Three reasons given were as follows:

*It took time to say my opinion.* (F2F 2 – S12)

*I could not explain what I meant unless I used difficult words.* (F2F 2 – S15)

*It was hard to think because I had to speak English a lot.* (F2F 2 – S2)

### **4.3.3 TRIANGULATION OF RESULTS**

The quantitative data demonstrated that carrying out the three tasks f2f had both significant short term and long term effects on uptake. The immediate post-test and delayed post-test gain scores demonstrated that uptake of the targeted lexical items in the opinion exchange was the most successful. As with F2F Group 1, the dictogloss produced the lowest gains in both the immediate and delayed post-test results. While the opinion exchange and the dictogloss were both rated evenly in the post-questionnaire as being the easiest of the three tasks, the dictogloss and the problem solving task were much more disliked. The most common complaints with the dictogloss were: (1) it took a lot of time; it was hard to understand; and (2) it was a struggle to summarize (paraphrase) the content. For the problem solving task, one of the biggest concerns was that the conversation between pairs kept stopping and getting stuck. In the participants' own words, this happened because:

*I didn't know how to fill in the blanks.* (F2F 2 – S4)

*I am bad at remembering phrasal verbs.* (F2F 2 – S10)

*The content was too hard.* (F2F 2 – S6)

The participants may have felt more pressure or frustration while engaged in the dictogloss and the problem solving task than the opinion exchange. As a result, such negative effects may have detracted from their ability to focus on the targeted language items in those tasks.

At the same time, the opinion exchange was also voted as being the most difficult task. The reasons, however, did not so much relate to difficulties with comprehension or a lack of time, but rather the struggle to keep speaking for a prolonged period of time. Even though the task was regarded as challenging, it was also perceived as being valuable practice. Consequently, the opinion exchange was also voted as the most enjoyable, and most likely had a positive effect on the participants' participation and capacity to notice the targeted lexical items.

#### **4.4 RESULTS FOR TEXT CHAT GROUP 1**

##### **4.4.1 PRE-TEST AND POST-TEST RESULTS**

The average pre-test result for Text Chat Group 1 was 12.78 out of 30. The combined immediate post-test results saw that average increase to 24.42 points, giving the group an average gain score of + 11.64 (see Figure 4.5). In the delayed post-test, the average result decreased by 5.57 points to 18.85 out of 30. However, the group still retained an average gain score of + 6.07. As Table 4.9 shows, the paired *t*-test analysis of the pre-test results with the combined immediate post-test results, and then the delayed post-test results, demonstrate that uptake of the targeted lexical items was significant in both ( $t = -13.31$ ,  $df = 13$ ,  $p = < 0.0001$ ;  $t = -10.49$ ,  $df = 13$ ,  $p = < 0.0001$ ).

Comparing the pre-test results and the immediate post-test results separately (see Figure 4.6), the dictogloss average increased from 6.28 to 9.35; the opinion exchange average increased from 4.64 to 9.28; and the problem solving task average increased from 1.78 to 5.74. The gain scores made were as follows: Dictogloss + 3.07; Opinion Exchange + 4.64; and Problem Solving Task + 4. In the delayed post-test results, the average gain score diminished but still remained positive: Dictogloss + 2; Opinion Exchange + 2.64; and Problem Solving Task + 1.57. The paired *t*-tests in Table 4.10 demonstrate that even these diminished gain scores yielded significant task-induced uptake effects ( $t = -5.29, df = 13, p = < 0.0001$ ;  $t = -5.67, df = 13, p = < 0.0001$ ;  $t = -2.66, df = 13, p = < 0.02$ ) over time for each task.

Figure 4.5  
Text Chat Group 1: Overall Scores for Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test

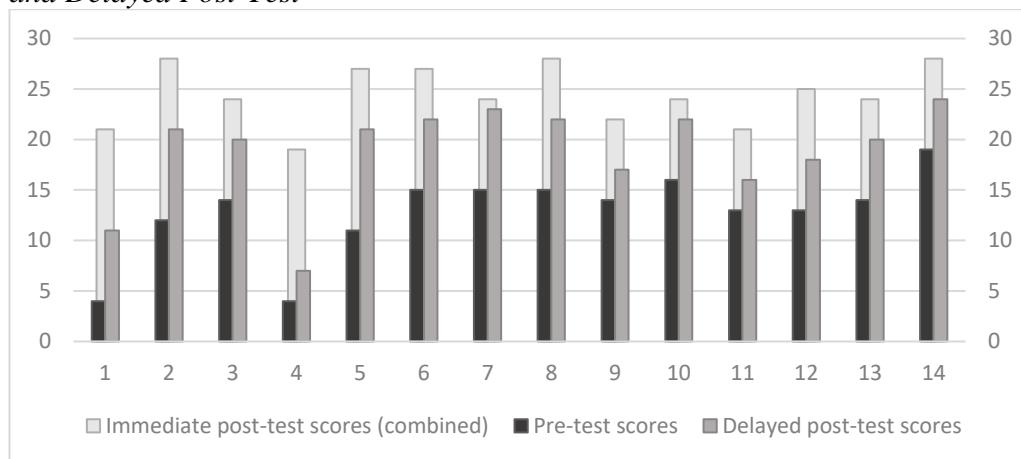


Table 4.9  
Text Chat Group 1: Paired *t*-Test Results for Total Score Comparison of Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test

Pre-test			Immediate post-tests (combined)			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				

12.78	4.17	0.89	24.42	2.92	0.78	14	-13.31	13	< 0.0001
Pre-test			Delayed post-test						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)
12.78	4.17	0.89	24.42	2.92	0.78	14	-10.49	13	< 0.0001

Figure 4.6

Text Chat Group 1: Pre-Test, Immediate Post-Test, and Delayed Post-Test Score Averages for Targeted Lexical Items per Task

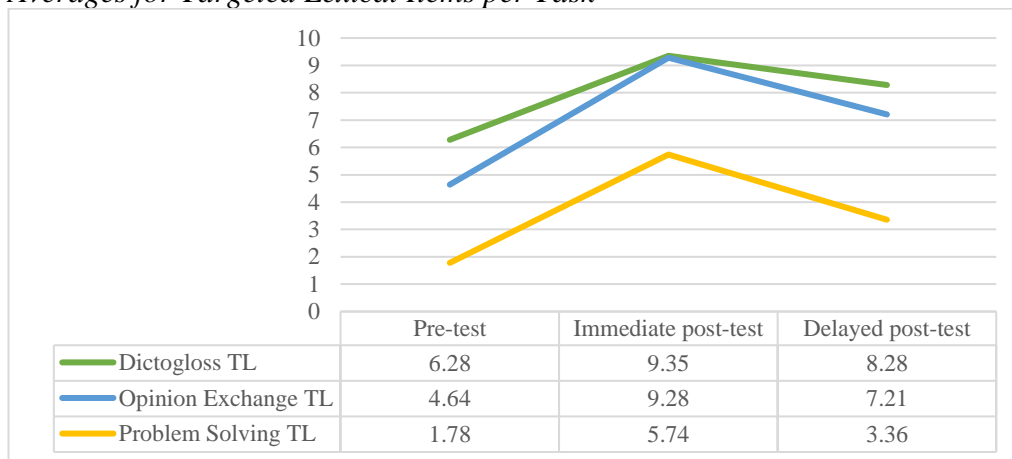


Table 4.10

Text Chat Group 1: Paired t-Test Results for Comparison of Pre-Test and Delayed Post-Test Score per Task

Pre-dictogloss			Delayed post-dictogloss						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)
6.28	2.16	0.57	8.28	2.01	0.53	14	-5.29	13	< 0.0001
Pre-opinion exchange			Delayed post-opinion exchange						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)
4.64	1.78	0.47	7.21	1.96	0.52	14	-5.67	13	< 0.0001
Pre-problem solving			Delayed post-problem solving						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)

#### 4.4.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE RESULTS

As shown in Table 4.11, the participants in Text Chat Group 1 generally had a good impression of digital technology and their own computer skills. Besides there being an even 50/50 split between those who stated they were somewhat comfortable using digital devices (50%) and those who were unsure (36%) or not (really) comfortable (14%), 11 participants (79%) said they were somewhat (29%) or very (50%) willing to learn more about them. Furthermore, 9 participants (64%) stated that they felt very strongly about the importance of improving their digital fluencies. Another 11 participants (78%) stated that they were positive (57% somewhat; 21% very) about the need for training in technology-enhanced language learning in education programs. The majority of participants also appraised their computer skills in most categories as being sufficient, with the exceptions being English typing (50% poor, 14% very poor) and general computer literacy (57% poor; 7% very poor).

Table 4.11  
*Text Chat Group 1: Participants' Results for the Pre-Questionnaire*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	2 (14%)	5 (36%)	4 (29%)	2 (14%)	1 (7%)
Comfortable using digital devices.	0 (0%)	7 (50%)	5 (36%)	1 (7%)	1 (7%)
Willingness to learn more about digital technologies.	7 (50%)	4 (29%)	3 (21%)	0 (0%)	0 (0%)
Feel behind fellow students in use of digital technologies.	3 (21%)	4 (29%)	4 (29%)	3 (21%)	0 (0%)
Important to improve digital fluency.	9 (64%)	4 (29%)	1 (7%)	0 (0%)	0 (0%)
Learning can be enhanced by digital tools and resources.	4 (28%)	5 (36%)	5 (36%)	0 (0%)	0 (0%)
Training in technology-enhanced language learning should be included in language education programs.	3 (21%)	8 (57%)	3 (21%)	0 (0%)	0 (0%)

Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	0 (0%)	3 (21%)	7 (50%)	3 (21%)	1 (7%)
English typing skills	0 (0%)	0 (0%)	5 (36%)	7 (50%)	2 (14%)
Web search skills	0 (0%)	3 (21%)	10 (71%)	1 (7%)	0 (0%)
Computer literacy skills	0 (0%)	0 (0%)	5 (36%)	8 (57%)	1 (7%)
Internet literacy skills	0 (0%)	3 (21%)	7 (50%)	3 (21%)	1 (7%)
Digital literacy skills	0 (0%)	1 (7%)	9 (64%)	3 (21%)	1 (7%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	1 (7%)	7 (50%)	3 (21%)	3 (21%)	0 (0%)
Enjoy text chatting	1 (7%)	10 (71%)	2 (14%)	1 (7%)	0 (0%)
Enjoy talking online	2 (14%)	3 (21%)	3 (21%)	4 (29%)	2 (14%)
	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	10 (71%)	3 (21%)	0 (0%)	1 (7%)	0 (0%)
Verbal SCMC usage	0 (0%)	4 (29%)	2 (14%)	8 (57%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	0 (0%)	2 (14%)	0 (0%)	8 (57%)	4 (29%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all
Using SCMC to practice English in the classroom is good	3 (21%)	6 (42%)	4 (29%)	1 (7%)	0 (0%)
Using text chat to practice English sometimes in the classroom is good	1 (7%)	8 (57%)	3 (21%)	2 (14%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	1 (7%)	9 (64%)	1 (7%)	3 (21%)	0 (0%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	8 (57%)	5 (36%)	1 (7%)		

Note. N=14.

Compared to the number of participants who stated they felt comfortable using digital devices, a slightly higher percentage said that they felt somewhat (50%) or very (7%) comfortable using online communication technology. A significant percentage of the group claimed to enjoy using text chat (somewhat 71%; very 7%), but only 5 participants (35%) said the same about video or voice chat applications. Looking at their frequency of SCMC use, 10 participants (71%) stated that they used text chat

daily while 8 participants (57%) maintained that they only used voice-based communication apps less than once a month. Unlike F2F Group 1, only 2 participants (14%) asserted that online communication was similar to speaking face to face. The remainder stated that it was somewhat (57%) or very (28%) different. Nevertheless, the majority responded positively to the idea of using online communication tools (63%), either text chat (64%) or voice chat (71%) to practice English in the classroom.

Table 4.12

*Text Chat Group 1: Participants' Results for the Post-Questionnaire*

Text chat class feedback	Yes, very	Yes	Not sure	No	No, not at all			
Enjoyed using text chat in the classroom	2 (14%)	8 (57%)	3 (21%)	1 (7%)	0 (0%)			
Felt comfortable using text chat to speak English	1 (7%)	4 (29%)	3 (21%)	6 (42%)	0 (0%)			
Found text chat the same as speaking English face-to-face	0 (0%)	2 (14%)	0 (0%)	9 (64%)	3 (21%)			
Feels positive to sometimes use text chat in the classroom in the future	2 (14%)	11 (78%)	1 (7%)	0 (0%)	0 (0%)			
	Dicto	Opin	Prob					
Most enjoyable task	3 (21%)	8 (57%)	3 (21%)					
Most disliked task	6 (42%)	4 (29%)	4 (29%)					
Easiest task	5 (36%)	7 (50%)	2 (14%)					
Most difficult task	6 (42%)	4 (29%)	4 (29%)					
	Dicto	Opin	Prob	Dicto + Opin	Opin + Prob	Prob + Dicto	All	None
Most suitable tasks for text chat in the classroom?	2 (14%)	5 (36%)	1 (7%)	2 (14%)	0 (0%)	0 (0%)	2 (14%)	2 (14%)
Most suitable tasks for f2f communication in the classroom?	3 (21%)	1 (7%)	4 (29%)	1 (7%)	1 (7%)	1 (7%)	3 (21%)	0 (0%)



	Face-to-face	Text chat						
Which communication mode is best to study English in a classroom setting?	10 (71%)	4 (29%)						

Note. N=14. Dicto – Dictogloss; Opin – Opinion exchange; Prob – Problem solving task

In the post-questionnaire (see Table 4.12), most participants said that they enjoyed using text chat in the classroom (57% yes; 14% yes, very much). Thirteen participants (92%) also stated that they were positive or very positive about using the mode to practise English in the future. At the same time, most stated that they did not feel comfortable while using it (21% not sure; 42% no) and that text chat was not the same as f2f communication (64% no; 21% no, not at all). Concerning the participants' impressions of the tasks, the majority claimed the opinion exchange was the most enjoyable and the easiest. Three reasons why were:

*The targeted language was easy to talk about. I just needed to discuss my ideas with my partner, so it was not so complicated. (TC1 – S2)*

*Ranking the targeted language and talking about it in English was fun. (TC1 – S9)*

*Communication for this task was the smoothest of the three. (TC1 – S4)*

Along similar lines, three reasons why the opinion exchange was the easiest were:

*It was just discussing the order. (TC 1 – S4)*

*I just had to explain my opinion. (TC 1 – S9)*

*The content and words were easy. (TC 1 – S14)*

On the other hand, the dictogloss was selected as the most disliked (42%) and most difficult (42%) task. Votes for the other two tasks came in even in both categories at 28% each. Comments about why the dictogloss was disliked were as follows:

*Making English sentences together was hard for me. (TC 1 – S3)*

*The theme was difficult and communication was not active. (TC 1 – S12)*

*Even in Japanese it would have been hard to do. (TC 1 – S9)*

Similarly, three reasons why it was difficult were:

*The words and listening part were difficult. (TC 1 – S8)*

*The news was difficult and it took time to think and type, so it prevented us from communicating. (TC 1 – S10)*

*Making sentences was hard. (TC 1 – S5)*

When asked which tasks would be better to do on text chat in the classroom, the most common response was the opinion exchange at 35%. Two reasons given were:

*Explaining face to face would be more difficult. (TC 1 – S1)*

*On text chat you can explain your ideas using longer, more detailed sentences. (TC 1 – S3)*

Regarding which tasks would be better to do f2f, eight participants (57%) either chose the dictogloss (21%), the problem solving task (29%), or both (7%). For the dictogloss, three participants commented as follows:

*Even if you cannot speak perfectly, it would be easier to talk about the content of this task face to face. (TC 1 – S10)*

*Telling your ideas for this task on text chat is hard. (TC 1 – S14)*

*If we spoke, we could explain things quicker. (TC 1 – S3)*

For the problem solving task, other participants stated:

*Doing it on text chat takes too much time. (TC 1 – S9)*

*It is too difficult to do this task without speaking directly to your partner. (TC 1 – S4)*

*The objective is hard so it would be better to do it face to face. (TC 1 – S2)*

#### **4.4.3 INTERVIEW RESULTS**

A summary of the feedback provided by the two Text Chat Group 1 interviewees is given using the researcher's field notes. Positive aspects about using text chat to practice English included: (1) it allows for more thinking time between utterances; (2) there is more time to think about grammar and how best to express yourself; (3) it is less stressful and easier to control the pace of the exchange; and (4) it is good for learners who are not confident speaking to help them gain confidence. On the other hand, some negative points that were mentioned included: (1) not being able to see your partner's face makes it difficult to understand their feelings; (2) if your partner is not good at typing it can be annoying; and (3) if you wait a long time you start to wonder if they understood you or not. One interviewee stated that she felt the problem solving task was the most difficult because the dialogue was hard to understand. She also struggled to talk about it with her partner as just trying to explain what part of the worksheet she wanted her partner to focus on took time. It made her frustrated, so she did not enjoy doing the task. The other interviewee stated that the dictogloss was the hardest because having to comprehend the listening section, and then paraphrasing it was tough. Nonetheless, she also stated that, for learning, it was probably the best task because it involved both listening and talking about complex sentence structures. Finally, both interviewees commented that having to do the dictogloss f2f probably would have been more difficult as a lot of thinking time was required, and that doing

it on text chat helped as they had more time to think about how to construct their sentences.

#### **4.4.4 TRIANGULATION OF RESULTS**

The immediate post-test results and delayed post-test results revealed that each task had a significant positive effect on uptake. The opinion exchange proved to be the most effective task in relation to gain scores for both the immediate post-test (+ 4.64) and delayed post-test (+ 2.64). At the same time, it was also rated as the most enjoyable and the easiest of the three tasks. It appears that the opinion exchange gave the participants the least amount of trouble communicating. Ten comments overall were made about the simplicity of the task and the extra thinking time that text chat allowed them.

Comparing the average gain scores in the immediate post-tests, the dictogloss achieved the lowest (+ 3.07), but then improved and moved into second place (+ 2) just above the problem solving task (+ 1.57) in the delayed post-test results. In the post-questionnaire, the participants judged the dictogloss as the most disliked and the most difficult task. Sharing their ideas while engaged in this task appears to have been more challenging than the opinion exchange. Nevertheless, the group still remained positive about sometimes using text chat to practice English in the future. Comparing the pre-questionnaire and post-questionnaire responses, the overall percentage of those who said they were very positive or positive about the notion jumped from 9 participants (7% very positive; 57% positive) to 13 participants (14% very positive; 78% positive).

## 4.5 RESULTS FOR TEXT CHAT GROUP 2

### 4.5.1 PRE-TEST AND POST-TEST RESULTS

The average pre-test score for Text Chat Group 2 was 14.33 out of 30 (see Figure 4.7). The three immediate post-test results combined to increase this average to 23.93, creating an average gain score of + 9.6 points per participant. In the delayed post-test, the average decreased by 5.27 points to 18.66 out of 30. However, Text Chat Group 2 retained an average gain of + 4.3 points. As shown in Table 4.13, a significant learning effect on uptake was demonstrated in the immediate post-test and delayed post-test results ( $t = -14.22, df = 14, p = < 0.0001$ ;  $t = -5.07, df = 14, p = < 0.0001$ ).

Figure 4.7

*Text Chat Group 2: Overall Scores for Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test*

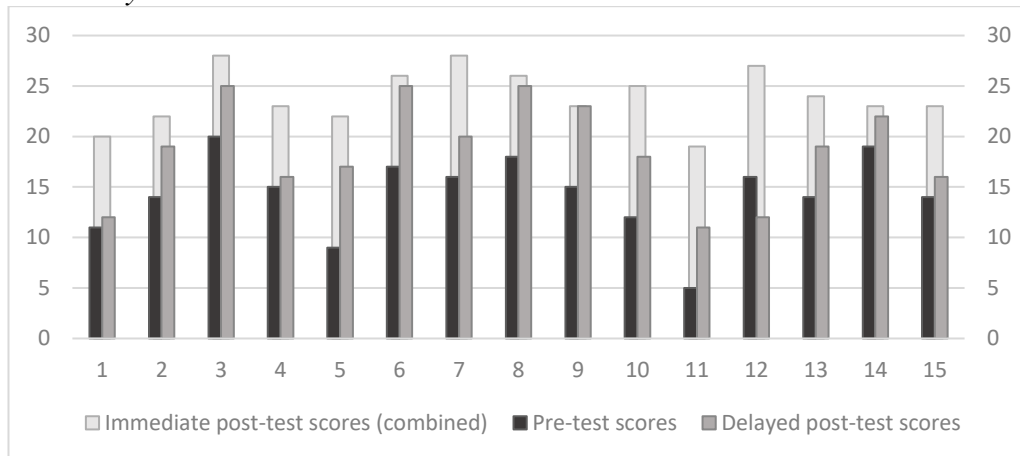


Table 4.13

*Text Chat Group 2: Paired t-Test results for Total Score Comparison of Pre-Test, Immediate Post-Test (combined), and Delayed Post-Test*

Pre-test			Immediate post-tests (combined)			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				

14.33	3.90	1.00	23.93	2.71	0.70	15	-14.22	14	< 0.0001
Pre-test			Delayed post-test						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)
14.33	3.90	1.00	18.66	4.76	1.22	15	-5.07	14	< 0.0001

A comparison of the participants' pre-test and immediate post-test results shows that: the dictogloss score average increased from 6.8 to 9.6; the opinion exchange score average increased from 5.73 to 9.73; and the problem solving score average increased from 2.06 to 4.6 (see Figure 4.8). The average gain scores were as follows: Dictogloss + 2.8; Opinion Exchange + 4; and Problem Solving + 2.53. Over time, the delayed post-test results showed that participants retained lower gain score averages: Dictogloss + 1.33; Opinion Exchange + 2; and Problem Solving + 0.73. The paired *t*-test results shown in Table 4.14 demonstrate that the diminished gain scores continued to show a significant learning effect for the dictogloss ( $t = -3.69, df = 14, p = < 0.002$ ) and opinion exchange ( $t = -4.27, df = 14, p = < 0.001$ ) but not the problem solving task ( $t = -1.79, df = 14, p = *0.09$ ).

Figure 4.8

*Text Chat Group 2: Pre-Test, Immediate Post-Test, and Delayed Post-Test Score Averages for Targeted Lexical Items per Task*

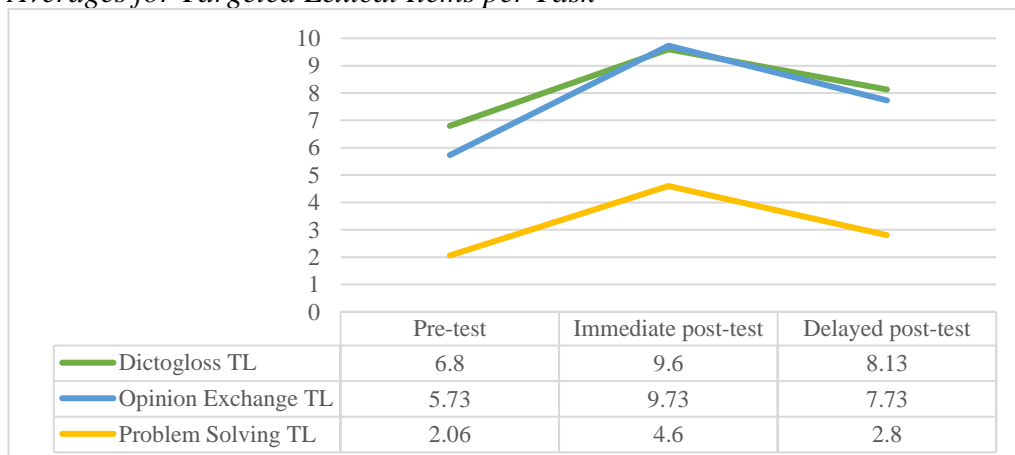


Table 4.14

*Text Chat Group 2: Paired t-Test Results for Comparison of Pre-Test and Delayed Post-Test Score per Task*

Pre-dictogloss			Delayed post-dictogloss			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
6.8	1.93	0.49	8.13	1.92	0.49	15	-3.69	14	< 0.002
Pre-opinion exchange			Delayed post-opinion exchange			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
5.73	1.83	0.47	7.73	1.58	0.40	15	-4.27	14	< 0.001
Pre-problem solving			Delayed post-problem solving			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
2.06	0.96	0.24	2.8	1.85	0.48	15	-1.79	14	* 0.09

#### 4.5.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE RESULTS

As shown in Table 4.15, the participants' initial impressions towards digital technologies were mostly negative, but their impressions of their own computer skills were relatively positive. Out of 15 participants, 10 participants (67%) stated that they were not sure if they enjoyed using digital devices or actively disliked them. A similar percentage stated they were uncertain if they felt comfortable using digital devices or that they did not feel comfortable using them. Overall, 12 participants stated that they felt improving their digital literacies was important (33% somewhat; 46% very) and 9 participants said they were willing to do so (33% somewhat; 27% very). However, a considerable percentage remained uncertain or sceptical about the benefits of digital tools and resources to enhance learning (33% not sure; 20% not really; 7% not at all),

or the need for training in technology-enhanced language learning (46% not sure; 7% not at all). Regarding their computer skills, 8 participants claimed their typing in Japanese was poor (53%) and in English, 9 participants stated that it was either poor (46%) or very poor (13%).

Table 4.15

*Text Chat Group 2: Participants' Results for the Pre-Questionnaire*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	3 (20%)	2 (13%)	5 (33%)	4 (27%)	1 (7%)
Comfortable using digital devices.	3 (20%)	1 (7%)	5 (33%)	5 (33%)	1 (7%)
Willingness to learn more about digital technologies.	4 (27%)	5 (33%)	2 (13%)	3 (20%)	1 (7%)
Feel behind fellow students in use of digital technologies.	1 (7%)	4 (27%)	4 (27%)	5 (33%)	1 (6%)
Important to improve digital fluency.	7 (46%)	5 (33%)	1 (7%)	2 (13%)	0 (0%)
Learning can be enhanced by digital tools and resources.	2 (13%)	4 (27%)	5 (33%)	3 (20%)	1 (7%)
Training in technology-enhanced language learning should be included in language education programs.	3 (20%)	4 (27%)	7 (46%)	0 (0%)	1 (7%)
Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	2 (13%)	1 (7%)	4 (27%)	8 (53%)	0 (0%)
English typing skills	1 (7%)	1 (7%)	4 (27%)	7 (46%)	2 (13%)
Web search skills	0 (0%)	3 (20%)	7 (46%)	5 (33%)	0 (0%)
Computer literacy skills	0 (0%)	2 (13%)	7 (46%)	5 (33%)	1 (7%)
Internet literacy skills	0 (0%)	2 (13%)	8 (53%)	3 (20%)	2 (13%)
Digital literacy skills	0 (0%)	1 (7%)	10 (66%)	2 (13%)	2 (13%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	2 (13%)	7 (47%)	3 (20%)	3 (20%)	0 (0%)
Enjoy text chatting	1 (7%)	6 (40%)	3 (20%)	1 (7%)	4 (27%)
Enjoy talking online	1 (6%)	2 (13%)	5 (33%)	3 (20%)	4 (27%)
	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	6 (40%)	1 (7%)	2 (13%)	6 (40%)	0 (0%)
Verbal SCMC usage	0 (0%)	2 (13%)	4 (27%)	9 (60%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	0 (0%)	3 (20%)	0 (0%)	9 (60%)	3 (20%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all
Using SCMC to practice English in the classroom is good	1 (7%)	7 (46%)	6 (40%)	1 (7%)	0 (0%)



Using text chat to practice English sometimes in the classroom is good	1 (7%)	8 (53%)	5 (33%)	1 (7%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	0 (0%)	10 (66%)	4 (27%)	1 (7%)	0 (0%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	8 (53%)	6 (40%)	1 (7%)		

Note. N=15.

When asked how comfortable they felt using SCMC, 7 participants (47%) answered somewhat and 2 participants (13%) answered very. Only 7 participants (47%), however, stated that using text chat was enjoyable (40% somewhat; 7% very), with an even smaller percentage stating the same for voice chat (13% somewhat; 7% very). Unlike F2F Group 2, a considerably larger percentage of this group claimed to only use text chat monthly (13%) or less (40%), with the frequency of voice chat apps being even less (27% monthly; 60% less than once a week). Most TC Group 2 participants strongly maintained that online communication was somewhat different (60%) or very different (20%) to f2f communication. Also, even though the majority stated that SCMC, or specifically text chat and voice chat, could somewhat benefit English practice in the classroom, a substantial percentage remained not certain.

Table 4.16  
*Text Chat Group 2: Participants' Results for the Post-Questionnaire*

Text chat class feedback	Yes, very	Yes	Not sure	No	No, not at all			
Enjoyed using text chat in the classroom	2 (14%)	11 (74%)	1 (7%)	1 (7%)	0 (0%)			
Felt comfortable using text chat to speak English	3 (20%)	6 (40%)	2 (13%)	4 (26%)	0 (0%)			
Found text chat the same as speaking	0 (0%)	2 (13%)	1 (7%)	8 (53%)	4 (27%)			

English face-to-face								
Feels positive to sometimes use text chat in the classroom in the future	4 (27%)	10 (66%)	1 (7%)	0 (0%)	0 (0%)			
	Dicto	Opin	Prob					
Most enjoyable task	2 (13%)	10 (66%)	3 (20%)					
Most disliked task	12 (80%)	2 (13%)	1 (7%)					
Easiest task	2 (13%)	11 (73%)	2 (13%)					
Most difficult task	14 (93%)	1 (7%)	0 (0%)					
	Dicto	Opin	Prob	Dicto + Opin	Opin + Prob	Prob + Dicto	All	None
Most suitable tasks for text chat in the classroom?	1 (7%)	5 (33%)	2 (13%)	0 (0%)	0 (0%)	3 (20%)	1 (7%)	3 (20%)
Most suitable tasks for f2f communication in the classroom?	6 (40%)	3 (20%)	0 (0%)	2 (13%)	1 (7%)	1 (7%)	1 (7%)	1 (7%)
	Face-to-face	Text chat						
Which communication mode is best to study English in a classroom setting?	11 (73%)	4 (27%)						

Note. N=15. Dicto – Dictogloss; Opin – Opinion exchange; Prob – Problem solving task

As shown in Table 4.16, 13 out of 15 participants in Text Chat Group 2 claimed to have enjoyed using text chat to communicate in English after the treatments had concluded (74% yes; 14% yes, very). Also, 9 participants stated that they felt comfortable (40%) or very comfortable (20%) using the mode. As with the pre-questionnaire results, the majority continued to consider text chat different (53%) or very different (27%) from f2f communication. However, 14 participants stated that they were positive (66%) or very positive (27%) about using it to sometimes practise

English in the classroom. Most participants selected the opinion exchange as being the most enjoyable and the easiest of the three tasks. Two reasons were as follows:

*Giving my opinion was hard but I was able to think about my ideas deeply. (TC 2 – S15)*

*It was valuable content and I could talk using new words. (TC 2 – S13)*

Three reasons why it was considered the easiest were:

*It was the easiest for me to express my opinion in English. (TC 2 – S6)*

*It was easy to communicate. (TC 2 – S11)*

*I could work on it and text at the same time. (TC 2 – S10)*

As with TC 1, this group also ranked the dictogloss as the most disliked of the three tasks. Four reasons included:

*It was hard to explain what I heard. (TC 2 – S6)*

*I could not get used to it. (TC 2 – S9)*

*I could not catch the first part of the news and it did not work well on text chat. (TC 2 – S5)*

*It was difficult to paraphrase. (TC 2 – S1)*

The dictogloss was also considered the most difficult. Two reasons given were:

*It was hard to make sentences from nothing and I could not do anything when my partner and I did not understand. (TC 2 – S15)*

*Even if I could listen to the words, it was hard to construct the sentences. (TC 2 – S1)*

When asked which task or tasks they thought would be better to do on text chat than face to face in the classroom, 5 participants (33%) chose the opinion exchange, 2 (13%) chose the problem solving task, and 3 (20%) chose the problem solving task and the dictogloss. For the opinion exchange, three students commented:

*It is easy to discuss this on text chat. (TC 2 – S9)*

*You can think more deeply about it on text chat. (TC 2 – S14)*

*It is easy to tell people your opinion. (TC 2 – S6)*

Regarding the problem solving task, three participants stated:

*Of the three, it was the only one I could do successfully. (TC 2 – S7)*

*There was a correct answer so I could match my answer with my partner's, and also improve my reading skills. (TC 2 – S15)*

*I could copy down what was on the screen. (TC 2 – S11)*

6 participants (40%) stated that they would prefer to do the dictogloss face to face.

Three reasons for this were:

*The topic was so hard, and I am bad at text chatting. (TC 2 – S7)*

*It was hard to communicate about this topic on text chat. (TC 2 – S8)*

*It would be more efficient to do this face to face. (TC 2 – S14)*

### **4.5.3 INTERVIEW RESULTS**

Using the researcher's field notes, some positive feedback about text chat communication was that: (1) it is more comfortable than speaking face to face; (2) it is fun because it is not often you get the chance to use English to text chat; (3) not being able to read your partner's face forces you to change your words to communicate.

Some negative points were: (1) it is hard to look at the screen all of the time; (2) it takes more time compared with talking face to face, sometimes you cannot finish what you want to say; (3) it is easy to get confused about what you and your partner are talking about. Of the three tasks, the Text Chat Group 2 interviewees stated that the dictogloss was the most difficult because it was stressful using text chat to discuss it.

Two reasons were: (1) it took a lot of time to share ideas and think about the sentence

*(In the end, we ran out of time)*; and (2) it was hard to keep the conversation going (*I stopped if I did not know how to spell something*). At the same time though, one interviewee stated that using text chat for the dictogloss and problem solving task was good in that he could use the computer screen to match his answers with his partner's. Also, it helped him improve his reading skills. Both interviewees also stated that they felt text chat was best suited for the opinion exchange because it: (1) allowed them time to think deeply; (2) made it easier for them to give their opinion; and (3) made them feel less rushed than perhaps they would have in a f2f conversation.

#### **4.5.4 TRIANGULATION OF RESULTS**

As the immediate post-test results showed, each task had a significant effect on uptake of the targeted lexical items. However, this effect only remained significant for the dictogloss and opinion exchange in the delayed post-test results. The average gain score for the problem solving task was the lowest in both the immediate post-test (+ 2.53) and delayed post-test results (+ 0.73). There was little in the way of feedback as to why this was the case. If anything, the problem solving task appears to have made less of an impression on the group than the other two tasks. The participants did not appear to have a strong opinion about it, either positively or negatively.

In contrast, the opinion exchange scored the highest gain scores in both post-tests (+ 4; + 1.33) while the dictogloss remained in the middle (+ 2.8; + 1.33). In the post-questionnaire, the opinion exchange was rated as much higher than the other two tasks in terms of how much the participants enjoyed it and how easy they felt it was. As with Text Chat Group 1, the participants felt the opinion exchange was the least stressful. Its objective was straightforward with many noting that it was enjoyable because they

were able to think deeply about the topic while exchanging ideas. Consequently, for this task, the text chat mode appears to have provided the participants with more distance and thinking time than the other two modes.

On the other hand, the dictogloss was rated high in terms of its difficulty and how much the participants disliked it. Having to exchange information from the recording and then paraphrase it with a partner appeared to have been particularly challenging on text chat. The participants' feedback highlights the difficulties they faced when trying to complete the task without breakdowns in communication. Time constraints and long pauses between replies appeared to have led to a certain amount of frustration. Overall, however, the percentage of participants who stated that using text chat sometimes to practise English in the classroom was beneficial increased from the pre-questionnaire results. In the pre-questionnaire, 9 participants (60%) responded positively (7% very; 53% somewhat). In the post-questionnaire, that number increased to 14 participants (27% very; 66% somewhat).

## **4.6 RESULTS FOR VOICE CHAT GROUP 1**

### **4.6.1 PRE-TEST AND POST-TEST RESULTS**

Voice Chat Group 1 started with a pre-test average of 15.13 out of 30. After combining the immediate post-test scores, that total increased to 26.31 (see Figure 4.9). That equalled a + 11.52 gain score average. Comparisons between the results from the combined immediate post-tests and delayed post-test revealed that the average score decreased by 4.58 points to 21.73 out of 30. A + 6.42 average gain score, however, was still maintained, making it the highest average of all three groups in Sub-Study 1.

Like with the other groups, paired *t*-tests carried out between the results of the pre-test, combined immediate post-tests, and delayed post-test, showed that a significant positive effect on uptake was sustained in both results ( $t = -17.19, df = 18, p = < 0.0001$ ;  $t = -12.08, df = 18, p = < 0.0001$ ) (see Table 4.17).

Figure 4.9  
*Voice Chat Group 1: Overall Scores for Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test*

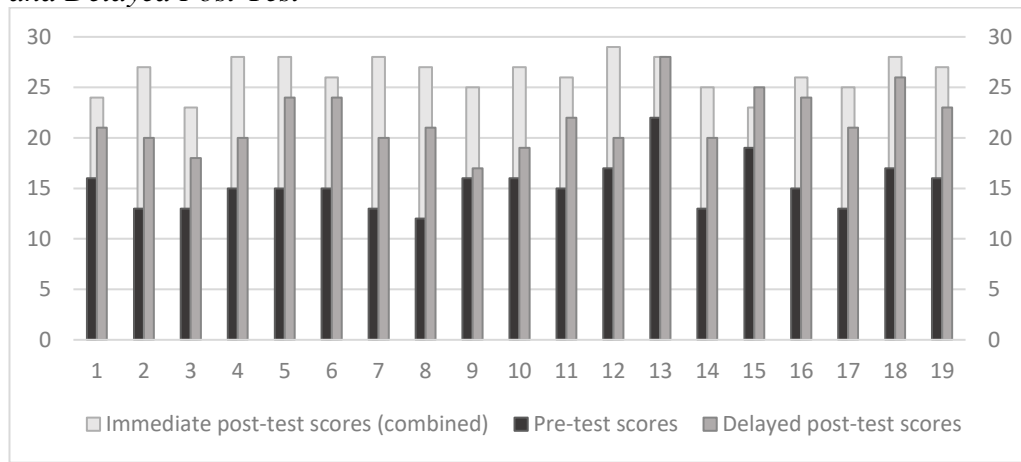


Table 4.17  
*Voice Chat Group 1: Paired t-Test Results for Total Score Comparison of Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test*

Pre-test			Immediate post-tests (combined)			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				
15.13	2.40	0.55	26.31	1.76	0.40	19	-17.19	18	< 0.0001

Pre-test			Delayed post-test			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				
15.13	2.40	0.55	21.73	2.84	0.65	19	-12.08	18	< 0.0001

Figure 4.10 compares uptake of the targeted language items separated by task in the pre-test, three immediate post-tests, and delayed post-test. The results of the immediate post-tests show the average gain score achieved per task as follows: Dictogloss + 2.1; Opinion Exchange + 4.21; and Problem Solving + 4.73. In the delayed post-test results, those averages decreased over time but still remained positive: Dictogloss + 1.78; Opinion Exchange + 2.94; and Problem Solving + 1.73. The paired *t*-test analysis found that all three treatments had a significant effect on uptake in the delayed post-test results ( $t = -6.59, df = 18, p = < 0.0001$ ;  $t = -6.98, df = 18, p = < 0.0001$ ;  $t = -3.90, df = 18, p = < 0.001$ ) (see Table 4.18). Despite the 2 to 4 week break, those effects were sustained for each task.

Figure 4.10  
Voice Chat Group 1: Pre-Test, Immediate Post-Test, and Delayed Post-Test Score Averages for Targeted Lexical Items per Task

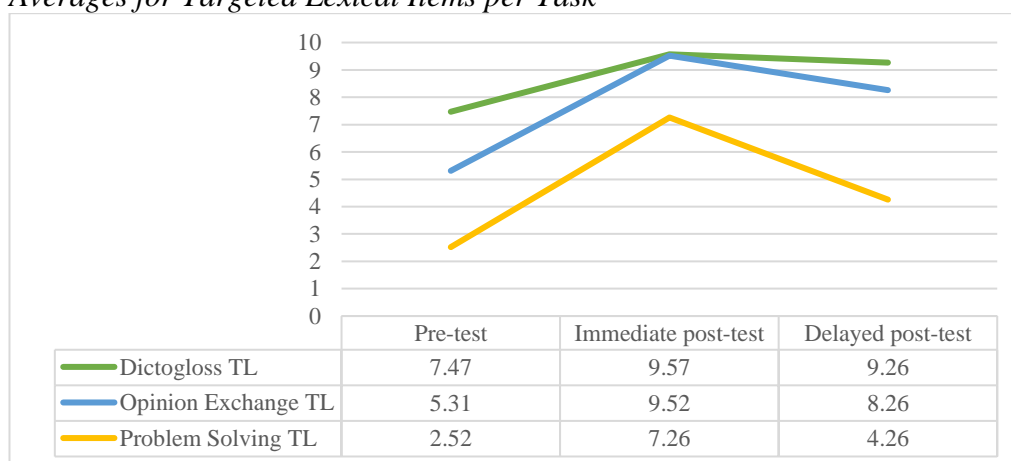


Table 4.18  
Voice Chat Group 1: Paired *t*-Test Results for Comparison of Pre-Test and Delayed Post-Test Score per Task

Pre-dictogloss			Delayed post-dictogloss			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				



7.47	1.3	0.29	9.26	0.8	0.18	19	-6.59	18	< 0.0001
Pre-opinion exchange			Delayed post-opinion exchange						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)
5.31	1.66	0.38	8.26	1.24	0.28	19	-6.98	18	< 0.0001
Pre-problem solving			Delayed post-problem solving						
M	SD	SEM	M	SD	SEM	n	t	df	p-value (Two-tailed)
2.52	1.26	0.28	4.26	2.33	0.53	19	-3.90	18	< 0.001

#### 4.6.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE RESULTS

As shown in Table 4.19, out of the 19 participants in this group, 12 (63%) stated that they enjoyed using digital devices (42% somewhat; 21% very much) while 18 (95%) felt it was important to improve their digital fluency (42% somewhat; 53% very much). Over two thirds also said that they were willing to learn more about digital technologies. Regarding learning, 15 participants (79%) stated that they felt digital tools and resources could benefit them. However, 9 (47%) were unsure or sceptical about the value of training for technology-enhanced language learning. Also, 15 participants (79%) claimed that they had poor (47%) or very poor (32%) English typing skills.

Table 4.19

*Voice Chat Group 1: Participants' Results for the Pre-Questionnaire*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	4 (21%)	8 (42%)	4 (21%)	3 (16%)	0 (0%)
Comfortable using digital devices.	4 (21%)	6 (31%)	6 (31%)	3 (16%)	0 (0%)
Willingness to learn more about digital technologies.	8 (42%)	7 (37%)	3 (16%)	1 (5%)	0 (0%)
Feel behind fellow students in use of digital technologies.	1 (5%)	8 (42%)	5 (26%)	3 (16%)	2 (10%)
Important to improve digital fluency.	10 (53%)	8 (42%)	0 (0%)	0 (0%)	1 (5%)

Learning can be enhanced by digital tools and resources.	7 (37%)	8 (42%)	4 (21%)	0 (0%)	0 (0%)
Training in technology-enhanced language learning should be included in language education programs.	0 (0%)	10 (53%)	8 (42%)	1 (5%)	0 (0%)
Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	0 (0%)	4 (21%)	7 (37%)	6 (32%)	2 (10%)
English typing skills	0 (0%)	1 (5%)	3 (16%)	9 (47%)	6 (32%)
Web search skills	0 (0%)	5 (26%)	10 (53%)	4 (21%)	0 (0%)
Computer literacy skills	0 (0%)	2 (10%)	10 (53%)	6 (32%)	1 (5%)
Internet literacy skills	0 (0%)	7 (37%)	8 (42%)	3 (16%)	1 (5%)
Digital literacy skills	0 (0%)	3 (16%)	10 (53%)	5 (26%)	1 (5%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	1 (5%)	11 (58%)	4 (21%)	3 (16%)	0 (0%)
Enjoy text chatting	4 (21%)	11 (58%)	4 (21%)	0 (0%)	0 (0%)
Enjoy talking online	3 (16%)	5 (26%)	6 (32%)	3 (16%)	2 (10%)
	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	12 (63%)	4 (21%)	0 (0%)	3 (15%)	0 (0%)
Verbal SCMC usage	1 (5%)	4 (21%)	6 (32%)	8 (42%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	0 (0%)	5 (26%)	1 (5%)	10 (53%)	3 (16%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all
Using SCMC to practice English in the classroom is good	6 (32%)	9 (47%)	4 (21%)	0 (0%)	0 (0%)
Using text chat to practice English sometimes in the classroom is good	5 (26%)	12 (63%)	1 (5%)	1 (5%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	3 (16%)	8 (42%)	6 (32%)	2 (10%)	0 (0%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	6 (32%)	9 (47%)	4 (21%)		

Note. N=19.

Out of 19 participants, 12 participants claimed to be somewhat (58%) or very (5%) comfortable using online communication technology. Also, 15 participants said they enjoyed using text chat (58% somewhat; 21% very), with 12 participants (63%) stating that they used it daily. On the other hand, only 9 participants reported that they enjoyed

voice chat applications (26% somewhat; 16% very) with 14 participants only using them once a month (32%) or less (42%). Regarding the prospect of using online communication tools to practise English, 15 participants stated that they were somewhat (47%) or very (32%) positive about the idea, with 17 participants (89%) supporting the inclusion of text chat (somewhat 63%; very 26%). Support for voice chat, however, was less, with 8 participants (42%) expressing uncertainty about its usefulness (32%) or feeling it would not be useful (10%).

Table 4.20 presents the post-questionnaire feedback for Voice Chat Group 1. It shows that the participants' impressions of voice chat became more positive after the treatments, with 16 (84%) stating that they enjoyed using it in the classroom (47% yes; 37% yes, very). When asked again if they would like to sometimes use the mode to practice English, 16 participants (84%) responded positively. Nearly half of the group claimed to have felt comfortable speaking English on voice chat (32% yes; 10% yes, very) while the other half did not (37% no; 5% not at all). Two-thirds stated that it was different (52%) or very different (21%) from speaking face to face. Gauging the group's impressions of the tasks, 11 participants (58%) stated that they enjoyed the opinion exchange the most. Three reasons for this were as follows:

*I could discuss deeply about the characteristics a leader should have. (VC 1 – S18)*

*I could exchange ideas because my ideas were different from my partner's. (VC 1 – S17)*

*I could understand the differences between my thinking and my partner's when we were filling in the boxes, and I could enjoy talking about the topic. (VC 1 – S5)*

None of the tasks appears to have been particularly more disliked than the others. As with F2F Group 1 and TC Group 1, the opinion exchange was selected as the easiest (48%) task because:

*All I had to do was explain my opinion. (VC 1 – S18)*

*The topic was easy. (VC 1 – S14)*

*Exchanging ideas was the main objective so I did not have to worry about time so much. (VC 1 – S6)*

Regarding which task was considered the most difficult, 8 participants (42%) chose the dictogloss while 7 (37%) chose the opinion exchange. Comments about the dictogloss included:

*I needed to memorize the information in the listening quickly. (VC 1 – S8)*

*Listening, taking notes and paraphrasing was hard for me. (VC 1 – S16)*

*I could not explain my information well. (VC 1 – S18)*

Comments about the opinion exchange included:

*Talking about leadership characteristics using simple words was hard. (VC 1 – S13)*

*I could not come up with a concrete image of a leader. (VC 1 – S7)*

*I could not come up with good reasons why I thought so. (VC 1 – S10)*

Of the three tasks, 5 participants (26%) stated that they felt all three tasks would have been better done face to face while another 5 participants (26%) stated the opposite.

Three reasons given as to why f2f interaction would be better were as follows:

*Seeing your partner's face makes it easier to understand each other. (VC 1 – S1)*

*Explaining yourself is more difficult on voice chat. (VC 1 – S16)*

*It is easier to talk face to face and take notes. (VC 1 – S14)*

On the other hand, the reasons for wanting to use voice chat included:

*Voice chat is better because I don't feel awkward when I get stuck. (VC 1 – S7)*

*It is good for people who are not good at English. (VC 1 – S8)*

*It is good to practice telling my ideas in English without gestures. (VC 1 – S3)*

Lastly, 26% of the group also stated that the opinion exchange would be better to do

f2f. For example:

*It was difficult to explain things precisely through voice chat. (VC 1 – S13)*

*You can show your passion about the topic face to face, so the conversation can be more active. (VC 1 – S19)*

Table 4.20

*Voice Chat Group 1: Participants' Results for the Post-Questionnaire*

Voice chat class feedback	Yes, very	Yes	Not sure	No	No, not at all			
Enjoyed using voice chat in the classroom	7 (37%)	9 (47%)	1 (5%)	2 (10%)	0 (0%)			
Felt comfortable using voice chat to speak English	2 (10%)	6 (32%)	3 (15%)	7 (37%)	1 (5%)			
Found voice chat the same as speaking English face-to-face	0 (0%)	3 (16%)	2 (10%)	10 (52%)	4 (21%)			
Feels positive to sometimes use voice chat in the classroom in the future	8 (42%)	8 (42%)	1 (5%)	1 (5%)	1 (5%)			
	Dicto	Opin	Prob					
Most enjoyable task	5 (26%)	11 (58%)	3 (15%)					
Most disliked task	7 (36%)	6 (32%)	6 (32%)					
Easiest task	5 (26%)	9 (48%)	5 (26%)					
Most difficult task	8 (42%)	7 (37%)	4 (21%)					
	Dicto	Opin	Prob	Dicto + Opin	Opin + Prob	Prob + Dicto	All	None
Most suitable tasks for voice	1 (5%)	4 (21%)	2 (10%)	0 (0%)	1 (5%)	1 (5%)	5 (26%)	5 (26%)

chat in the classroom?								
Most suitable tasks for f2f communication in the classroom?	3 (16%)	5 (26%)	1 (5%)	0 (0%)	0 (0%)	1 (5%)	4 (21%)	5 (26%)
	Face-to-face	Voice chat						
Which communication mode is best to study English in a classroom setting?	12 (63%)	7 (37%)						

Note. N=19. Dicto – Dictogloss; Opin – Opinion exchange; Prob – Problem solving task

### 4.6.3 INTERVIEW RESULTS

Using the researcher's notes to summarize the interviewees' perspectives, one participant commented that, as voice chat is a part of modern communication, having opportunities to use it in the classroom environment was worthwhile. The lack of facial cues was good because it forced them to think about how to communicate more smoothly. Similarly, the other interviewee stated that it helped him learn how to communicate with people in different ways. The inability to use gestures or facial expressions was thought to be both good and bad. Lacking the ability to read their partner's expressions forced them to put greater effort into finding the right words to convey their meaning. On the other hand, not being able to see their partner's face also led to frustration at times. As for the tasks, both interviewees felt that the dictogloss and the problem solving task demanded more cognitive processing than the opinion exchange. The dictogloss was stated to be particularly difficult because it involved listening to detailed information, then having to exchange what they heard, so as to paraphrase it.

#### **4.6.4 TRIANGULATION OF RESULTS**

As with the other two groups in Sub-Study 1, the gain scores made in the immediate post-tests and delayed post-test proved that all three tasks had a significant effect on uptake of the targeted lexical items. The biggest initial gains were made in the problem solving task (+ 4.73), closely followed by the opinion exchange (+ 4.21). In the delayed post-test results, however, the gain score average for the opinion exchange was better sustained (+ 2.94) than the other two tasks (Dictogloss + 1.78; Problem Solving Task + 1.73). As with F2F Group 1 and TC Group 1, VC Group 1 participants voted the opinion exchange as being the most enjoyable and the easiest task. Generally, it was stated that sharing their thoughts about leadership qualities was fun and easy to do as there were no right or wrong answers to worry about. It is possible that the participants' positive attitudes about the task fostered better long-term retention of the targeted language items.

At the same time, the opinion exchange was also voted a close second to the dictogloss as being the most difficult task. Seven participants felt the theme was difficult and/or struggled to visualise what they should say. As with F2F Group 1, these learners are thought to be the less proficient speakers of the group, who were likely stretched to their limits by the length and pace of the verbal interactions. The dictogloss was voted as the most disliked and difficult task of the three. Difficulties catching the information in the listening section and confusion over how to paraphrase it appear to have been the two biggest contributing factors. However, the extent to which voice chat promoted or impeded uptake in the dictogloss is difficult to gauge. On average, the participants were already familiar with more than half of the targeted language items prior to carrying it out. Compared to the pre-questionnaire results, the percentage of

participants in the post-questionnaire who stated they were positive about using voice chat to practice English in the classroom increased, jumping from 11 participants (15% very positive; 42% positive) to 16 participants (42% very positive; 42% positive).

## **4.7 RESULTS FOR VOICE CHAT GROUP 2**

### **4.7.1 PRE-TEST AND POST-TEST RESULTS**

Voice Chat Group 2 started with a pre-test average of 13.23 out of 30 (see Figure 4.11). After combining the three immediate post-test scores, the total increased to 25.94. The average gain score equalled + 12.36. Combining the immediate post-test results and comparing them to the delayed post-test results revealed that the average participant's score fell 7.1 points to 18.84 out of 30. An average gain score of + 5.61 was maintained. As with Voice Chat Group 1 in Sub-Study 1, Voice Chat Group 2 had the highest average gain score of all three modes in Sub-Study 2. Paired *t*-tests carried out between the pre-test and both the immediate post-tests, and delayed post-test (see Table 4.21) showed that there was a significant effect on uptake in both analysis ( $t = -, df = 18, p = < 0.0001$ ;  $t = -, df = 18, p = < 0.0001$ ).

*Figure 4.11*



*Voice Chat Group 2: Overall Scores for Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test*

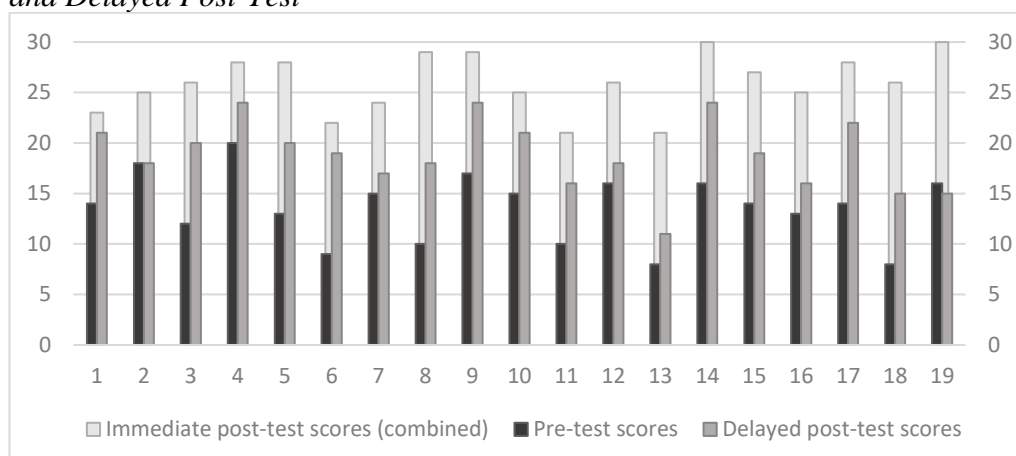


Table 4.21

*Voice Chat Group 2: Paired t-Test Results for Total Score Comparison of Pre-Test, Immediate Post-Test (Combined), and Delayed Post-Test*

Pre-test			Immediate post-tests (combined)			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
13.57	3.38	0.77	25.94	2.83	0.65	19	-17.14	18	< 0.0001

Pre-test			Delayed post-test			n	t	df	p-value (Two-tailed)
M	SD	SEM	M	SD	SEM				
13.57	3.38	0.77	18.84	3.45	0.79	19	-7.56	18	< 0.0001

Figure 4.12 shows that the average immediate post-test score increase per task: Dictogloss 7.10 to 9.52; Opinion Exchange 4.63 to 9.52; Problem Solving 1.89 to 6.89. The average gain score for each were: Dictogloss + 2.4; Opinion Exchange + 4.89; and Problem Solving + 5. In the delayed post-test, the average for each task decreased but remained positive: Dictogloss + 0.94; Opinion Exchange + 2.68; and Problem Solving + 1.57. Paired *t*-tests found significant effects on uptake were sustained in the

delayed post-test results for each task ( $t = -2.88, df = 18, p = < 0.01$ ;  $t = -6.62, df = 18, p = < 0.0001$ ;  $t = -3.69, df = 18, p = < 0.002$ ) (see Table 4.22).

Figure 4.12

Voice Chat Group 2: Pre-Test, Immediate Post-Test, and Delayed Post-Test Score Averages for Targeted Lexical Items per Task

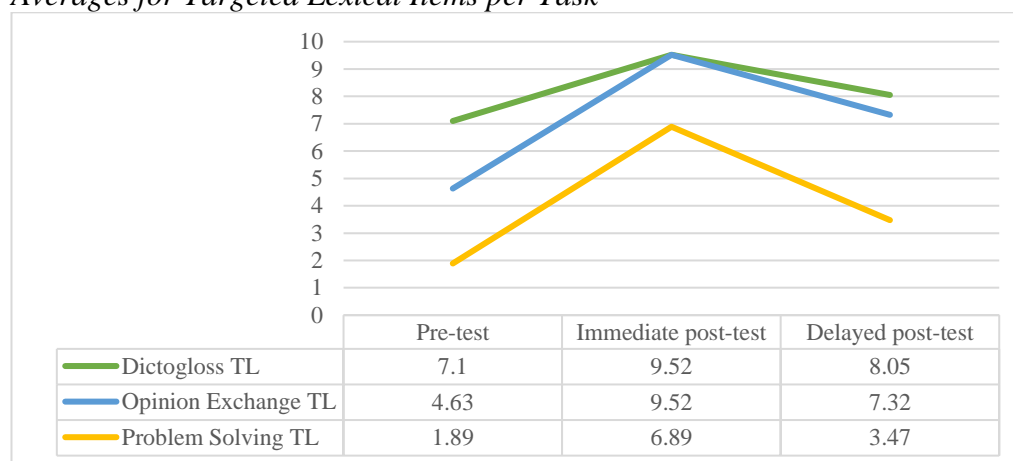


Table 4.22

Voice Chat Group 2: Paired *t*-Test Results for Comparison of Pre-Test and Delayed Post-Test Score per Task

Pre-dictogloss			Delayed post-dictogloss			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				
7.1	1.82	0.41	8.05	1.35	0.31	19	-2.88	18	< 0.01
Pre-opinion exchange			Delayed post-opinion exchange			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				
4.63	1.70	0.39	7.32	1.79	0.41	19	-6.62	18	< 0.0001
Pre-problem solving			Delayed post-problem solving			n	<i>t</i>	<i>df</i>	<i>p</i> -value (Two-tailed)
M	SD	SEM	M	SD	SEM				
1.89	1.10	0.25	3.47	1.64	0.37	19	-3.69	18	< 0.002

#### 4.7.2 PRE-QUESTIONNAIRE AND POST-QUESTIONNAIRE RESULTS

The pre-questionnaire revealed that a large percentage of the group had positive impressions about digital technology (see Table 4.23). The majority were either somewhat comfortable (47%) or very comfortable (15%) using digital devices. Most participants also felt willing to learn more about digital technology (37% somewhat; 31% very much) and that improving their digital fluency was important (52% somewhat; 37% very much). There was also a positive response to the idea of using digital tools and resources to enhance learning (52% somewhat; 21% very much). At the same time, 8 participants (42%) felt training in technology-enhanced language learning was somewhat necessary while 7 (37%) remained unsure. As for the participants' feelings towards their own computer skills, there was a fairly even divide between those who had a positive impression of their Japanese typing skills and computer literacy and those who did not. Similar to other groups, the majority stated that they had poor (47%) or very poor (31%) English typing skills. However, over two-thirds of this group felt that their web search skills, internet literacy, and digital literacy were adequate or better.

Table 4.23

*Voice Chat Group 2: Participants' Results for the Pre-Questionnaire*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	5 (26%)	9 (47%)	3 (16%)	2 (10%)	0 (0%)
Comfortable using digital devices.	3 (16%)	9 (47%)	6 (31%)	1 (5%)	0 (0%)
Willingness to learn more about digital technologies.	6 (31%)	7 (36%)	5 (26%)	1 (5%)	0 (0%)
Feel behind fellow students in use of digital technologies.	1 (5%)	7 (37%)	6 (31%)	4 (21%)	1 (5%)
Important to improve digital fluency.	7 (37%)	10 (52%)	2 (10%)	0 (0%)	0 (0%)
Learning can be enhanced by digital tools and resources.	4 (21%)	10 (52%)	4 (21%)	1 (5%)	0 (0%)
Training in technology-enhanced language learning should be included in language education programs.	3 (16%)	8 (42%)	7 (37%)	1 (5%)	0 (0%)

Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	0 (0%)	4 (21%)	6 (31%)	8 (42%)	1 (5%)
English typing skills	0 (0%)	1 (5%)	3 (16%)	9 (47%)	6 (31%)
Web search skills	3 (16%)	3 (16%)	9 (47%)	4 (21%)	0 (0%)
Computer literacy skills	1 (5%)	3 (16%)	6 (31%)	8 (42%)	1 (5%)
Internet literacy skills	1 (5%)	5 (26%)	11 (57%)	2 (10%)	0 (0%)
Digital literacy skills	1 (5%)	3 (16%)	12 (63%)	3 (16%)	0 (0%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	4 (21%)	12 (63%)	1 (5%)	2 (10%)	0 (0%)
Enjoy text chatting	5 (26%)	9 (47%)	1 (5%)	4 (21%)	0 (0%)
Enjoy talking online	2 (10%)	3 (16%)	4 (21%)	7 (36%)	3 (16%)
	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	12 (63%)	4 (21%)	2 (10%)	1 (5%)	0 (0%)
Verbal SCMC usage	0 (0%)	6 (31%)	4 (21%)	9 (47%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	1 (5%)	9 (47%)	0 (0%)	6 (31%)	3 (16%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all
Using SCMC to practice English in the classroom is good	2 (10%)	10 (52%)	7 (37%)	0 (0%)	0 (0%)
Using text chat to practice English sometimes in the classroom is good	4 (21%)	11 (57%)	4 (21%)	0 (0%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	1 (5%)	11 (57%)	3 (16%)	3 (16%)	1 (5%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	7 (37%)	9 (47%)	3 (16%)		

Note. N=19.

A very high percentage of Voice Chat Group 2 asserted that they were somewhat comfortable (63%) or very comfortable (21%) using online communication technology, with 14 participants (73%) claiming they enjoy text chatting (47% somewhat; 21% very much). Only 5 participants (25%), however, stated the same for voice-based applications (16% somewhat; 10% very much). As with other groups, the frequency with which the participants used the two SCMC modes also varied greatly,

with 12 (63%) declaring daily use of text chat while 13 (68%) claimed they only used voice-based applications monthly (21%) or less than that (47%). When asked if online communication was the same as f2f communication, 10 (52%) responded affirmatively while 9 (47%) stated that it was not. Although 7 participants (37%) maintained that they were unsure how useful online communication tools would be to practise English in a classroom setting, the majority were generally positive about the prospect. Regarding each of the SCMC modes, 15 (78%) said that they were somewhat positive (57%) or very positive (21%) to the use of text chat while 12 (62%) stated the same for voice chat (57% somewhat; 5% very much).

Table 4.24 shows that the overwhelming majority of Voice Chat Group 2 enjoyed using voice chat to practise speaking English (52% somewhat; 37% very much). A slight majority also stated that they felt comfortable using the mode. On the other hand, the percentage that felt voice chat was similar to f2f interaction decreased compared to the pre-questionnaire feedback (16% somewhat similar; 5% the same). Nevertheless, 16 participants (84%) still asserted that they would be somewhat positive (47%) or very positive (37%) to continue using voice chat periodically to practise English in the classroom. Of the three tasks, 11 participants (57%) chose the problem solving task as the most enjoyable. This was the only time in the study when a task other than the opinion exchange was given the majority vote. Four reasons given were as follows:

*I could enjoy it because it was kind of a riddle. (VC 2 – S16)*

*We could answer it by helping each other. (VC 2 – S8)*

*It was fun to solve the problem together. (VC 2 – S10)*

*By the time we did this task, I was getting used to voice chat. (VC 2 – S19)*

The percentage of votes given to the task that was most disliked were fairly evenly distributed (37% Dictogloss; 31% Opinion Exchange; 31% Problem Solving). A clearer majority selected the dictogloss as being the easiest task (47%). Four reasons given were:

*The vocabulary used was easy to understand. (VC 2 – S7)*

*I had a lot of time to think by myself. (VC 2 – S3)*

*I could concentrate on matching my ideas with my partner's. (VC 2 – S10)*

*It was easy to talk about. (VC 2 – S18)*

For the most difficult task, both the dictogloss and opinion exchange scored slightly higher than the problem solving task: 7 (37%) for each task opposed to 5 (26%) for the problem solving task. Two reasons why the dictogloss was thought to be hard were:

*I did not understand much because the listening was hard. (VC 2 – S16)*

*It was hard because even if I didn't understand the content, I had to talk about it with my partner. (VC 2 – S17)*

For the opinion exchange, three participants stated that:

*The topic was deep. (VC 2 – S4)*

*It was hard to explain why I ranked things the way I did. (VC 2 – S10)*

*The topic was difficult to talk about. (VC 2 – S3)*

Of the three tasks, 7 participants (37%) stated that they felt none of the tasks would be better to do on voice chat. Three comments provided were as follows:

*It is easier to understand by seeing each other and reading the other people's facial expressions. (VC 2 – S1)*

*It is easier to understand more when speaking up close. (VC 2 – S3)*

*It is too difficult to communicate not being able to see the person's face. (VC 2 – S15)*

Giving similar reasons to those above, the majority also selected either the dictogloss, the problem solving task, or both, as being the best to do face to face. Two reasons given were:

*I can use gestures when I don't remember words or something is hard to explain. (VC 2 – S7)*

*It is hard to communicate on voice chat. (VC 2 – S6)*

Table 4.24  
*Voice Chat Group 2: Participants' Results for the Post-Questionnaire*

Voice chat class feedback	Yes, very	Yes	Not sure	No	No, not at all			
Enjoyed using voice chat in the classroom	7 (37%)	10 (52%)	0 (0%)	1 (5%)	1 (5%)			
Felt comfortable using voice chat to speak English	4 (21%)	7 (37%)	3 (16%)	4 (21%)	1 (5%)			
Found voice chat the same as speaking English face-to-face	1 (5%)	3 (15%)	1 (5%)	8 (42%)	6 (31%)			
Feels positive to sometimes use voice chat in the classroom in the future	7 (37%)	9 (47%)	1 (5%)	0 (0%)	2 (10%)			
	Dicto	Opin	Prob					
Most enjoyable task	3 (16%)	5 (26%)	11 (57%)					
Most disliked task	7 (37%)	6 (31%)	6 (31%)					
Easiest task	9 (47%)	6 (31%)	4 (21%)					
Most difficult task	7 (37%)	7 (37%)	5 (26%)					
	Dicto	Opin	Prob	Dicto + Opin	Opin + Prob	Prob + Dicto	All	None
Most suitable tasks for voice chat in the classroom?	2 (10%)	2 (10%)	0 (0%)	2 (10%)	2 (10%)	1 (5%)	3 (15%)	7 (37%)
Most suitable tasks for f2f communication in the classroom?	3 (16%)	0 (0%)	3 (16%)	0 (0%)	0 (0%)	3 (16%)	6 (31%)	4 (21%)
	Face-to-face	Voice chat						
Which communication	13 (68%)	6 (31%)						

mode is best to study English in a classroom setting?								
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Note. N=19. Dicto – Dictogloss; Opin – Opinion exchange; Prob – Problem solving task

### 4.7.3 INTERVIEW RESULTS

Using the researcher’s notes taken during the interviews, some positive comments made about the voice chat mode were: (1) without being able to read your partner’s face it forces you to listen harder; (2) you feel satisfied when you can get your opinion across; (3) the challenge makes it enjoyable; and (4) the atmosphere is pretty relaxed and fun compared to f2f communication. Conversely, some negative feedback included: (1) it is hard to catch words sometimes because of a bad connection; (2) if you are not a good speaker it can be frustrating not being able to use gestures; and (3) speaking this way all the time can get a little lonely. Of the three tasks, the problem solving task was considered the most enjoyable because: (1) the dialogue was easy to talk about; (2) you only had to fill in the gaps; and (3) it was fun filling in the calendar with a partner. The two interviewees from Voice Chat Group 2 considered the dictogloss as the hardest because: (1) you had to keep repeating yourself to give your partner time to write down what you were saying; and (2) it was easy to get stuck not knowing what to write next. At the same time, however, one interviewee also mentioned that, if she had done either the dictogloss or problem solving tasks face to face, she would have most likely used more Japanese to explain difficult things. The two interviewees thought that using voice chat to carry out all three tasks was not so problematic. Each task was considered fairly enjoyable but as with f2f communication, they stated that it depended on the partner you got.



#### 4.7.4 TRIANGULATION OF RESULTS

Both the immediate post-test and delayed post-test results show that each task had a significant and sustainable effect on uptake of the targeted lexical items. As with VC Group 1, the problem solving task achieved the biggest immediate gain score average (+ 5), followed closely by the opinion exchange (+ 4.89). However, in the delayed post-test results, there was a switch, with the biggest protracted gains being made by the opinion exchange (+ 2.68), followed then by the problem solving task (+ 1.57). The dictogloss gain scores remained the lowest in both results (+ 2.4; + 0.94). Having already been familiar with a substantial portion of this task's targeted language items before the treatment is certain to have limited the participants' ability to achieve higher gain scores.

In the post-questionnaire, the problem solving task was voted as the most enjoyable. As with other groups, there appears to have been a strong association between task satisfaction and uptake. As the problem solving task was the last treatment for this group, two participants commented that they felt more relaxed using voice chat the third time round. If these feelings could be generally attributed to the whole group, then certainly it would have fostered a positive effect on learning. Both the opinion exchange and the dictogloss were rated as being more difficult than the problem solving task. Although only marginal, the dictogloss was also rated as being more disliked than the other two tasks. Essentially, the need for the participants to rely solely on their verbal skills to discuss the content was the biggest defining factor. Those who struggled speaking ended up feeling the most dissatisfied. Conversely, those who did not find it a problem rated the dictogloss as the easiest task and appear to have felt the task was not that much of a challenge.

For the participants who rated the opinion exchange as being the most difficult or most disliked task, a different problem emerged. Being able to contribute to the conversation was not so much an issue as being able to contribute fast enough. Even though they had more space between themselves and their partners than in a f2f exchange, they still had to verbally converse with their partner in real time. As such, they would have still felt pressure to respond promptly. Those who struggled to do this found the task difficult. At the same time, however, their capacity to notice the targeted language items does not appear to have been greatly impaired. Finally, by the end of the study, the percentage of participants who stated they felt positive about using text chat to practise English increased. Compared to the pre-questionnaire data, the percentage of positive replies rose from 12 participants (5% very positive; 57% positive) to 16 participants (37% very positive; 47% positive).

## **4.8 OVERALL RESULTS**

### **4.8.1 DATA COLLATED FOR SUB-STUDY 1**

To determine if there were any significant differences in the gain scores achieved by each group, a series of one-way ANOVA calculations were performed. As Table 4.25 shows, the one-way ANOVA calculations carried out on each of the immediate post-test results revealed a similar effect size on uptake for each of the modes (Dictogloss -  $Pr(>F) = 0.154$ ; Problem solving -  $Pr(>F) = 0.432$ ; Opinion exchange -  $Pr(>F) = 0.626$ ). Likewise, the analysis of the combined totals of the immediate post-tests produced the same result ( $Pr(>F) = 0.745$ ) (see Table 4.26). Consequently, the data

indicated that there were no significant mode effect differences on immediate post-task uptake of the targeted lexical items across all three groups.

Table 4.25

*Sub-Study 1: One-way ANOVA of gain scores from Immediate Post-Tests*

Dictogloss					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	9.671	4.835	1.942	0.154
Error	50	124.518	2.490		
Corrected Total	52	134.189			

Problem solving					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	5.323	2.662	0.854	0.432
Error	50	155.884	3.118		
Corrected Total	52	161.208			

Opinion exchange					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	2.248	1.124	0.473	0.626
Error	50	118.922	2.378		
Corrected Total	52	121.170			

Table 4.26

*Sub-Study 1: One-Way ANOVA of Gain Scores from Immediate Post-Tests (Combined Total)*

Total gain scores for immediate post-tests					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	4.986	2.493	0.296	0.745
Error	50	420.901	8.418		
Corrected Total	52	425.887			

For the delayed post-test, each participant's overall gain score was tallied and compared to the pre-test results. The gain scores were then divided per task, the same as in the immediate post-tests. The three separated gain scores were compared using one-way ANOVA (see Table 4.27). A significant difference was discovered between

the groups' uptake of the targeted language from the dictogloss ( $Pr (>F) = 0.012$ ). In a follow-up post-hoc analysis, the difference was found to exist between the text chat group and the f2f group, as well as the voice chat group and the f2f group. In short, the mode effect on uptake in the dictogloss was significantly stronger for both SCMC types than f2f communication. No significant difference existed between the scores of text chat and voice chat. The total gain score tally per group for the delayed post-test also revealed no significant difference between the capacity of the participants using each mode to recall the targeted language items after a 2 to 4 week period (see Table 4.28).

Table 4.27  
*Sub-Study 1: One-Way ANOVA of Gain Scores from Delayed Post-Test (per Task)*

Dictogloss					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	14.850	7.425	4.862	<b>0.012</b>
Error	50	76.358	1.527		
Corrected Total	52	91.208			
treatments pair	Tukey HSD Q statistic	Tukey HSD p-value	Tukey HSD inference		
<b>Face-to-face vs Text Chat</b>	3.9409	0.0201701	* <b>p&lt;0.05</b>		
<b>Face-to-face vs Voice Chat</b>	3.5346	0.0410722	* <b>p&lt;0.05</b>		
Text Chat vs Voice Chat	0.6840	0.8690027	insignificant		

Problem solving					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	0.307	0.154	0.037	0.964
Error	50	206.863	4.137		
Corrected Total	52	207.170			

Opinion exchange					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	1.157	0.579	0.161	0.852
Error	50	180.126	3.603		
Corrected Total	52	181.283			

Table 4.28

*Sub-Study 1: One-Way ANOVA of Gain Scores from Delayed Post-Test*

Total gain scores for delayed post-test					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	24.451	12.226	1.834	0.170
Error	50	333.360	6.667		
Corrected Total	52	357.811			

**4.8.2 DATA COLLATED FOR SUB-STUDY 2**

Again, for Sub-Study 2, one-way ANOVA calculations were carried out on the gain scores of the three immediate post-tests. These revealed a significant difference between the three communication modes, regarding uptake of the targeted language for the problem solving task ( $Pr(>F) = 0.0001$ ) (see Table 4.29). The post-hoc analysis of the immediate post-test results for each task indicated that voice chat had a significantly better effect on uptake for the problem solving task than either f2f communication or text chat. Another post-hoc analysis of the combined scores for all three tasks revealed another significant difference ( $Pr(>F) = 0.033$ ) (see Table 4.30). On the whole, voice chat did substantially better than text chat. Despite the voice chat group attaining the overall highest gain scores, the mode effect size on uptake was only significantly different compared to text chat, and not compared to f2f communication.

Table 4.29

*Sub-Study 2: One-Way ANOVA of Gain Scores from Immediate Post-Tests*

Dictogloss					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	1.574	0.787	0.295	0.746
Error	50	133.558	2.671		
Corrected Total	52	135.132			

Problem solving					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	56.130	28.065	9.650	<b>0.0001</b>
Error	50	145.418	2.908		
Corrected Total	52	201.547			
treatments pair	Tukey HSD Q statistic	Tukey HSD p-value	Tukey HSD inference		
Face-to-face vs Text Chat	1.7522	0.4380234	insignificant		
<b>Face-to-face vs Voice Chat</b>	4.4393	0.0078597	<b>** p&lt;0.01</b>		
<b>Text Chat vs Voice Chat</b>	5.9222	0.0010053	<b>** p&lt;0.01</b>		

Opinion exchange					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	6.922	3.461	1.350	0.269
Error	50	128.211	2.564		
Corrected Total	52	135.132			

Table 4.30  
*Sub-Study 2: One-Way ANOVA of Gain Scores from Immediate Post-Tests (Combined Total)*

Total gain scores for immediate post-tests					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	70.668	35.334	3.645	<b>0.033</b>
Error	50	484.653	9.693		
Corrected Total	52	555.321			
treatments pair	Tukey HSD Q statistic	Tukey HSD p-value	Tukey HSD inference		
Face-to-face vs Text Chat	1.0798	0.7099290	insignificant		
Face-to-face vs Voice Chat	2.7264	0.1414504	insignificant		
<b>Text Chat vs Voice Chat</b>	3.6408	0.0342895	<b>* p&lt;0.05</b>		

As with the delayed post-test results in Sub-Study 1, the gain score totals were tallied and compared to each participant's pre-test results. The gain scores were then divided per task. Using one-way ANOVA, the three separated gain scores were then compared across groups (see Table 4.31). The results showed no significant differences between each group's scores (Dictogloss - Pr (>F) = 0.614; Problem solving - Pr (>F) = 0.371; Opinion exchange - Pr (>F) = 0.418). Again, on the further analysis of the overall gain

score totals from the delayed post-test, there was no significant difference in the results ( $Pr(>F) = 0.659$ ) (see Table 4.32). This meant that each mode's effect on uptake was not significantly different after the 2 to 4 week interval.

Table 4.31  
*Sub-Study 2: One-Way ANOVA of Gain Scores from Delayed Post-Test (per Task)*

Dictogloss					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	1.854	0.927	0.493	0.614
Error	50	94.070	1.881		
Corrected Total	52	95.925			

Problem solving					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	6.034	3.017	1.011	0.371
Error	50	149.249	2.985		
Corrected Total	52	155.283			

Opinion exchange					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	5.456	2.728	0.887	0.418
Error	50	153.789	3.076		
Corrected Total	52	159.245			

Table 4.32  
*Sub-Study 2: One-Way ANOVA of Gain Scores from Delayed Post-Test*

Total gain scores for delayed post-test					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	7.249	3.624	0.420	0.659
Error	50	431.544	8.631		
Corrected Total	52	438.792			

#### 4.8.3 DATA COLLATED FOR SUB-STUDY 1 AND SUB-STUDY 2

As shown in Table 4.33, in Sub-Study 1, text chat achieved the highest gain score average in the combined immediate post-test results. Long-term retention of the

targeted lexical items, however, was best achieved by voice chat. F2f communication achieved the lowest gain scores of all three modes both times. In Sub-Study 2, voice chat attained the highest gain score average in both the combined immediate post-test results and the delayed post-test results. F2f achieved the second highest average, doing better than text chat both times. The compiled gain scores of both sub-studies indicated that the best overall (combined) immediate post-test and delayed post-test averages were achieved by the voice chat mode. F2f communication achieved the second highest average in the combined immediate post-test results. However, in the delayed post-test, text chat beat f2f in sustained retention of the targeted lexical items.

Table 4.33  
*Average Gain Score Comparisons for Sub-Study 1 and Sub-Study 2*

	Immediate (combined) post-test GS			Delayed post-study test GS		
	F2F	TC	VC	F2F	TC	VC
Sub 1	10.95	11.64	11.52	4.9	6.07	6.42
Sub 2	10.42	9.6	12.36	4.84	4.3	5.26
Overall	10.69	10.58	11.95	4.87	5.12	5.84

Table 4.34 compares the average gain scores achieved by each group per task. For the dictogloss, text chat maintained the highest average both in the immediate post-test and delayed post-test results. For the opinion exchange and problem solving task, voice chat was the most successful mode. In both immediate post-test and delayed post-test, participants using voice chat achieved more uptake than either of the other two modes. At no time did f2f communication achieve the highest gain score average for any of the tasks. However, f2f outperformed text chat in both the opinion exchange and the problem solving task.



Table 4.34

*Average gain score of each task per mode for the study as a whole*

Immediate post gain score av. for dictogloss			Immediate post gain score av. for opinion exchange			Immediate post gain score av. for problem solving task		
F2F	TC	VC	F2F	TC	VC	F2F	TC	VC
2.3	2.93	2.26	4.38	4.31	4.55	4	3.24	4.86
Delayed gain score av. for dictogloss			Delayed gain score av. for opinion exchange			Delayed gain score av. for problem solving task		
F2F	TC	VC	F2F	TC	VC	F2F	TC	VC
0.84	1.65	1.36	2.64	2.31	2.81	1.58	1.13	1.65

Table 4.35

*One-Way ANOVA of Gain Scores from Immediate Post-Tests for Sub-Study 1 and Sub-Study 2*

Dictogloss					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	8.811	4.405	1.709	0.186
Error	103	265.538	2.578		
Corrected Total	105	274.349			
Problem solving					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	44.206	22.103	6.742	<b>0.002</b>
Error	103	337.652	3.278		
Corrected Total	105	381.858			
treatments pair	Tukey HSD Q statistic	Tukey HSD p-value	Tukey HSD inference		
Face-to-face vs Text Chat	2.4166	0.2070007	insignificant		
Face-to-face vs Voice Chat	2.9758	0.0939397	insignificant		
<b>Text Chat vs Voice Chat</b>	<b>5.1541</b>	<b>0.0012166</b>	<b>** p&lt;0.01</b>		
Opinion exchange					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	1.064	0.532	0.213	0.808
Error	103	256.832	2.494		
Corrected Total	105	257.896			

The one-way ANOVA analysis of the combined immediate post-test gain scores from both sub-studies showed a significant difference in uptake of the problem solving

task's targeted language items ( $Pr (>F) = 0.002$ ) (see Table 4.35). A further Tukey (HSD) analysis revealed that the difference lay between voice chat and text chat ( $p < 0.01$ ). The voice chat mode effect on uptake was significantly more positive than that of text chat. Another one-way ANOVA analysis carried out on the divided (per task) delayed post-test gain score, indicated another significant mode effect on uptake from the dictogloss ( $Pr (>F) = 0.040$ ) (see Table 4.36). The post-hoc Tukey (HSD) analysis showed that the difference lay between text chat and f2f. No significant difference was evident in the immediate post-test scores. However, retention of the new lexical input was better sustained over time by those using text chat than those speaking face to face ( $p < 0.05$ ). As Table 4.37 shows, no significant differences were found in the one-way ANOVA analysis of either the total combined immediate post-test gain scores ( $Pr (>F) = 0.110$ ) or delayed post-test gain scores ( $Pr (>F) = 0.302$ ) in the study (Sub-Study 1 + Sub-Study 2) as a whole. In certain circumstances, mode and task design effects can be seen to have had either a positive or negative impact on uptake. However, overall, the data signified that all participants obtained similar learning outcomes regardless of the mode they used.

Table 4.36  
*One-Way ANOVA of Gain scores from Delayed Post-Test (per Task) for Both Sub-Study 1 and Sub-Study 2*

Dictogloss					
Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	11.652	5.826	3.325	<b>0.040</b>
Error	103	180.47	1.752		
Corrected Total	105	192.123			
treatments pair	Tukey HSD Q statistic	Tukey HSD p-value	Tukey HSD inference		
<b>Face-to-face vs Text Chat</b>	<b>3.5251</b>	<b>0.0376750</b>	<b>* p&lt;0.05</b>		
Face-to-face vs Voice Chat	2.4479	0.1987945	insignificant		
Text Chat vs Voice Chat	1.2425	0.6425300	insignificant		

Problem solving

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	5.054	2.527	0.724	0.487
Error	103	359.437	3.490		
Corrected Total	105	364.491			

Opinion exchange

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	4.250	2.125	0.610	0.545
Error	103	358.892	3.484		
Corrected Total	105	363.142			

Table 4.37

*One-Way ANOVA of Gain Scores for Each Group's Immediate Post-Tests (Combined Totals for the Entire Study) and Delayed Post-Test*

Immediate post-tests

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	41.405	20.702	2.256	0.110
Error	103	945.237	9.177		
Corrected Total	105	986.642			

Delayed post-test

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	2	18.790	9.395	1.210	0.302
Error	103	799.550	7.763		
Corrected Total	105	818.340			

Table 4.38 presents the pre-questionnaire feedback from all 106 participants that took part in the study. It shows that, at the outset of the study, there was approximately an even divide between those who stated they enjoyed and felt comfortable using digital devices and those who were either unsure or did not feel comfortable. In relation to the participants' willingness to learn more about digital technology or the importance they placed on improving their digital fluency, the feedback was extremely positive (40% somewhat willing; 31% very willing; 43% somewhat important; 47% very important). On the other hand, specifically using digital tools to enhance their own

learning or the need for training in technology-enhanced language learning was less appealing, with only 60% answering favourably to both. Generally, the majority felt that their computer skills were adequate except for their English typing skills (45% poor; 30% very poor), although around half of the respondents stated that their Japanese typing skills and computer literacy was also inadequate.

Table 4.38  
*All Participants' Pre-Questionnaire Results*

Participant impressions about digital technology	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Enjoy use of digital devices	18 (17%)	41 (39%)	24 (23%)	17 (16%)	6 (5%)
Comfortable using digital devices.	12 (11%)	39 (37%)	36 (34%)	16 (15%)	3 (3%)
Willingness to learn more about digital technologies.	33 (31%)	43 (41%)	22 (21%)	7 (6%)	1 (1%)
Feel behind fellow students in use of digital technologies.	14 (13%)	36 (34%)	29 (27%)	21 (20%)	6 (5%)
Important to improve digital fluency.	50 (47%)	46 (43%)	6 (5%)	2 (2%)	2 (2%)
Learning can be enhanced by digital tools and resources.	23 (22%)	41 (39%)	35 (33%)	6 (5%)	1 (1%)
Training in technology-enhanced language learning should be included in language education programs.	14 (13%)	47 (44%)	38 (36%)	6 (5%)	1 (1%)
Participant impressions about their computer skills	Very good	Good	Okay	Poor	Very poor
Japanese typing skills	2 (2%)	14 (13%)	38 (36%)	41 (39%)	11 (10%)
English typing skills	1 (1%)	4 (4%)	21 (19%)	48 (45%)	32 (30%)
Web search skills	6 (5%)	19 (18%)	56 (53%)	23 (22%)	2 (2%)
Computer literacy skills	2 (2%)	8 (7%)	38 (36%)	50 (47%)	8 (7%)
Internet literacy skills	3 (3%)	20 (19%)	48 (45%)	28 (26%)	7 (7%)
Digital literacy skills	2 (2%)	12 (11%)	56 (53%)	30 (28%)	6 (5%)
Participant impressions about SCMC	Yes, very much	Yes, somewhat	Not sure	No, not really	No, not at all
Comfortable using online communication technology	11 (10%)	55 (52%)	23 (22%)	17 (16%)	0 (0%)
Enjoy text chatting	14 (13%)	54 (51%)	21 (20%)	10 (9%)	7 (7%)
Enjoy talking online	10 (9%)	23 (22%)	28 (26%)	27 (25%)	18 (17%)
	Daily	Weekly	Monthly	Less than once a month	Never
Text chat usage	62 (58%)	16 (15%)	6 (5%)	22 (21%)	0 (0%)
Verbal SCMC usage	3 (3%)	24 (23%)	25 (23%)	54 (51%)	0 (0%)
	The same	Similar	Not sure	Somewhat different	Very different
Resemblance between online communication and face-to-face communication	2 (2%)	33 (31%)	3 (3%)	50 (47%)	18 (17%)
	Yes, very	Yes, Somewhat	Not sure	No, not really	No, not at all

Using SCMC to practice English in the classroom is good	17 (16%)	49 (46%)	36 (34%)	4 (4%)	0 (0%)
Using text chat to practice English sometimes in the classroom is good	14 (13%)	65 (61%)	21 (20%)	6 (6%)	0 (0%)
Using voice chat to practice English sometimes in the classroom is good	7 (7%)	61 (57%)	23 (22%)	14 (13%)	1 (1%)
	Face-to-face	Text chat	Voice chat		
Which communication mode is best to study English in a classroom setting?	54 (51%)	38 (36%)	14 (13%)		

Note. N=106.

Regarding online communication, most participants stated that they felt comfortable using it (52% somewhat; 10% very) and enjoyed text chatting (51% somewhat; 13% very). At the same time, a large percentage said that they were unsure if they liked voice-based online communication (26%) or stated that they did not enjoy it (25% not really; 17% not at all). Most participants were generally more versed in using text chat (58% daily; 15% weekly) than voice chat applications (23% weekly; 3% daily). Two-thirds stated that they felt online communication was somewhat different (47%) or very different (17%) to f2f communication. Nevertheless, the majority were positive about using SCMC tools to practise English in the classroom.

The post-questionnaire data of the participants who used the same communication mode in Sub-Study 1 and Sub-Study 2 was combined to give an overall view of the tasks. As shown in Table 4.39, f2f participants clearly enjoyed the opinion exchange the most. Out of the three tasks, it was viewed as having promoted the most natural type of conversation. Many comments were made about the task fostering deep discussions on the topic, and that explaining their ideas and understanding their partners was both challenging and enjoyable. On the other hand, a similar number of

participants disliked the dictogloss and the problem solving task the most. Those tasks required more input processing to attain their intended goals, which resulted in complaints about communication breakdowns concerning meaning and how to proceed with them. It appears that these challenges may have led to periods of uncomfortable silence, which resulted in both tasks being less favourably rated than the opinion exchange.

Table 4.39  
*Face-to-Face Participants' Post Questionnaire Results*

Face-to-face class feedback	Dictogloss	Opinion exchange	Problem solving
Most enjoyable task	9 (23%)	25 (64%)	5 (13%)
Most disliked task	16 (41%)	10 (25%)	13 (33%)
Easiest task	15 (38%)	16 (41%)	8 (20%)
Most difficult task	9 (23%)	18 (46%)	12 (31%)

Note. N=39.

Almost an equal number of participants selected the dictogloss and the opinion exchange as being the easiest task. The steps involved in their designs do not appear to have given the participants as much trouble as the problem solving task. The dictogloss consisted of listening and paraphrasing, while the opinion exchange involved ranking and explaining. At the same time, however, the opinion exchange was also rated as being the most difficult of the three tasks. Although the design was straightforward and prompted a steady flow of communication, having to keep the conversation going at a steady pace over a prolonged period of time appears to have led the weaker interlocutors of the two groups to feel that the task was harder than the others.

Table 4.40 presents the combined post-questionnaire data for the two text chat groups. The overwhelming majority stated that they enjoyed using text chat to practise English in the classroom (65% somewhat; 14% very much) and felt positive about continuing to use it sometimes in the future (72% somewhat; 21% very much). At the same time, there was a divide between those who felt comfortable using it (34% somewhat; 14% very much), and those who were unsure (17%) or not comfortable (34%). Regarding the participants' impressions of the tasks themselves, the selections for each category were very clear. The opinion exchange was chosen as the most enjoyable (62%) and the easiest (62%), while the dictogloss was selected as the most disliked (62%) and the most difficult (69%).

Table 4.40  
*Text Chat Participants' Post-Questionnaire Results*

Text chat class feedback	Yes, very	Yes	Not sure	No	No, not at all			
Enjoyed using text chat in the classroom	4 (14%)	19 (65%)	4 (14%)	2 (7%)	0 (0%)			
Felt comfortable using text chat to speak English	4 (14%)	10 (34%)	5 (17%)	10 (34%)	0 (0%)			
Found text chat the same as speaking English face-to-face	0 (0%)	4 (14%)	1 (0%)	17 (58%)	7 (24%)			
Feels positive to sometimes use text chat in the classroom in the future	6 (21%)	21 (72%)	2 (7%)	0 (0%)	0 (0%)			
	Dicto	Opin	Prob					
Most enjoyable task	5 (17%)	18 (62%)	6 (21%)					
Most disliked task	18 (62%)	6 (21%)	5 (17%)					
Easiest task	7 (24%)	18 (62%)	4 (14%)					
Most difficult task	20 (69%)	5 (17%)	4 (14%)					
	Dicto	Opin	Prob	Dicto + Opin	Opin + Prob	Prob + Dicto	All	None

Most suitable tasks for text chat in the classroom?	3 (10%)	10 (34%)	3 (10%)	2 (7%)	0 (0%)	3 (10%)	3 (10%)	5 (17%)
Most suitable tasks for f2f communication in the classroom?	9 (31%)	4 (14%)	4 (14%)	3 (10%)	2 (7%)	2 (7%)	4 (14%)	1 (3%)
	Face-to-face	Text chat						
Which communication mode is best to study English in a classroom setting?	21 (72%)	8 (28%)						

Note. N=29. Dicto – Dictogloss; Opin – Opinion exchange; Prob – Problem solving task

As with the f2f participants, those using text chat enjoyed the challenge of exchanging their opinions about leadership qualities. They also found the procedure of the task to be the least cognitively demanding. At the same time, the distance created by text chat appears to have allowed more thinking time than what could be afforded through f2f communication. As a result, the anxiety level of the participants while doing this task, especially the weaker speakers in the groups, does not seem to have been such a problem. On the other hand, many text chat participants did struggle with the dictogloss. They had difficulty explaining the information they heard in the listening. Sometimes not knowing what to type appears to have led to long pauses, which may have contributed to conversational turn-taking becoming jumbled. Consequently, the process was likely slow and confusing, which tended to make many text chat participants view the task as difficult and/or unappealing. These sentiments were clearly expressed in the post-questionnaire when the dictogloss was selected as the task most preferred to have been done f2f (31%).



Table 4.41 presents the post-questionnaire data from the two voice chat groups. Similar to text chat, most participants stated they enjoyed using the mode to practise English in the classroom (49% somewhat; 36% very much) and were positive about the prospect of continuing using it in the future (43% somewhat; 38%; very much). At the same time, a large percentage remained unsure how comfortable they were using voice chat to communicate (15%), or they were not completely comfortable about it (28%). Regarding task impressions, like those who communicated f2f, the feedback was fairly divided. Similar numbers of participants voted both the opinion exchange and the problem solving task as being the most enjoyable task. Sentiments about the dictogloss and the opinion exchange being the easiest or most difficult tasks were also evenly divided. No task stood out as being particularly more disliked than another. Like other participants, those who used voice chat found the opinion exchange enjoyable for its capacity to promote sustained meaningful interaction. Unlike other participants, however, many using voice chat also stated that they liked the problem solving task for the challenge it presented. Having distance between themselves and their partners (as with text chat) appears to have lessened the potentially unnerving effects of prolonged silences. Also, being able to verbally communicate possibly helped them struggle less than their text chat counterparts who had to explain themselves through typing. As a consequence, there ended up being a divide between those voice chat participants who preferred the goal-orientated tasks (problem solving) or the open-ended opinion exchanges. Additionally, there was an even greater divide between those who felt frustrated by communication breakdowns during the dictogloss, and those who found the fast pace of the opinion exchange to be very arduous. This resulted in a greater range of opinions regarding their impressions of the tasks as compared to those in other groups, particularly text chat.

Table 4.41  
*Voice Chat Participants' Post-Questionnaire Results*

Voice chat class feedback	Yes, very	Yes	Not sure	No	No, not at all			
Enjoyed using voice chat in the classroom	14 (36%)	19 (49%)	1 (2%)	3 (10%)	1 (2%)			
Felt comfortable using voice chat to speak English	6 (15%)	13 (33%)	6 (15%)	11 (28%)	2 (5%)			
Found voice chat the same as speaking English face-to-face	1 (2%)	6 (15%)	3 (8%)	18 (46%)	10 (26%)			
Felt positive to sometimes use voice chat in the classroom in the future	15 (38%)	17 (43%)	2 (5%)	1 (2%)	3 (8%)			
	Dicto	Opin	Prob					
Most enjoyable task	8 (21%)	16 (41%)	14 (36%)					
Most disliked task	14 (36%)	12 (32%)	12 (32%)					
Easiest task	15 (39%)	15 (39%)	8 (21%)					
Most difficult task	14 (37%)	14 (37%)	10 (26%)					
	Dicto	Opin	Prob	Dicto + Opin	Opin + Prob	Prob + Dicto	All	None
Most suitable tasks for voice chat in the classroom?	3 (8%)	6 (15%)	2 (5%)	2 (5%)	3 (8%)	2 (5%)	7 (18%)	13 (33%)
Most suitable tasks for f2f communication in the classroom?	6 (15%)	5 (13%)	4 (10%)	0 (0%)	0 (0%)	4 (10%)	10 (26%)	9 (23%)
	Face-to-face	Voice chat						
Which communication mode is best to study English in a classroom setting?	25 (64%)	13 (36%)						

Note. N=38. Dicto – Dictogloss; Opin – Opinion exchange; Prob – Problem solving task

#### **4.9 SUMMARY**

The quantitative results of this study showed that using text chat and voice chat in the classroom was at times equally or more effective than f2f interaction at promoting uptake through task-based language learning. Comparisons of the total gain scores of the immediate post-tests (combined) and the delayed post-test indicated that voice chat outperformed f2f communication in both sub-studies. The two text chat groups also achieved higher gain score averages than their f2f counterparts in all, except the immediate post-tests (combined) in Sub-Study 2. Text chat also consistently promoted better uptake of the targeted language items in the dictogloss than either voice chat or f2f.

The qualitative data indicated that the participants' perceptions of the three tasks were affected by the mode they used. Depending on the goal of the tasks or the amount of cognitive processing involved, the distance felt between those using SCMC or speaking f2f appears to have been interpreted as a positive or negative. Nevertheless, the post-questionnaire feedback proved that the participants enjoyed the challenges that SCMC posed when carrying out task-based learning in the EFL classroom, and the overwhelming majority stated they were positive about the benefits of using both modes in some capacity to practise English in the future.

## **CHAPTER 5**

### **DISCUSSION**

#### **5.1 OVERVIEW**

Based on the results of the study reported in Chapter 4, this chapter responds to the research questions stated in Section 1.2, examining each one by analysing the quantitative and qualitative data in relation to communication mode, task design, time considerations, and learner perceptions. To answer Research Question 1, “To what extent can uptake of new L2 input be affected by task design and communication mode?”, the discussion starts by evaluating how effective each mode was at facilitating lexical uptake in the study in general, and then in relation to each task. The design features of all three tasks are compared to gauge their difficulty levels, and how issues of cognitive load may have impacted on the participants’ capacity to notice targeted language items. The crossover between mode and design is also considered, and the dynamics of the relationship are discussed in relation to the post-test results.

For Research Question 2, “To what extent do time allowances play a role?”, the feedback provided specifically by the participants in Sub-Study 2 is used to explore the similarities and differences between the three groups’ perceptions of time. Comparisons are made with the quantitative data, including deductions as to the extent time restrictions impacted on the participants’ ability to pay attention to the targeted language items when doing the tasks on different modes. For Research Question 3,

“To what extent do learner perceptions of tasks differ depending on the communication mode they use?”, the participants’ responses to the questionnaires were used to compare each group’s general impressions of the tasks to ascertain whether mode type had any effect. Similarities and differences are discussed, and inferences are made as to the participants’ attitudes towards each task in relation to mode-design effects and uptake. Lastly, the chapter concludes by discussing the affordances of the two SCMC modes to promote task-based learning in EFL classrooms and the contexts in which they can be most effectively employed.

## **5.2 COMPARING THE EFFECTIVENESS OF SCMC MODES TO PROMOTE L2 UPTAKE**

Comparisons of the pre-test and post-test results of the study show that each mode had an overall positive effect on uptake of the targeted lexical items. The paired *t*-test analysis of the immediate post-test and delayed post-test results showed that significant test score improvements were made across all three modes. The majority of the participants exhibited positive learning achievements in their capacity to recall previously unknown words and phrases integrated into the tasks. These findings are comparable to those of earlier f2f studies (Keck et al., 2006; Mackey & Goo, 2007) and CMC studies (Blake, 2000; Pellettieri, 2000; Tudini, 2003), which also demonstrated that learners in both communication environments can exhibit similar learning traits such as a higher likelihood to notice and negotiate lexical matters over grammatical matters. Despite differences in the way people communicate f2f or online, Ziegler (2016) states that CMC has the capacity to produce similar learning features and outcomes, with both types of communication being able to provide learners with opportunities to negotiate form-related issues and receive feedback. The results of the

post-tests in the study confirmed that text chat and voice chat had a similar capacity to f2f communication to promote uptake in an EFL classroom setting. At the same time, the data also revealed significant and circumstantial evidence that different modes and task designs affected uptake to varying degrees.

For the dictogloss, the quantitative results revealed that text chat promoted the highest levels of uptake of the targeted language items. In the study overall, text chat achieved the best gain scores in both the immediate post-test (TC +2.93; F2F +2.3; VC +2.26) and delayed post-test (TC +1.65; VC +1.36; F2F +0.84) results. In Sub-Study 1, both SCMC groups attained significantly higher levels of uptake than their f2f counterparts, with text chat achieving the best overall average. In Sub-Study 2, text chat again obtained the highest gains in the immediate post-test and delayed post-test. The scores, however, were not significantly different from those achieved by other modes. Nonetheless, as reported in Section 4.8.3, the combined results from both sub-studies demonstrated that text chat fostered significantly higher levels of uptake after a delayed two-week period than f2f communication did.

Text chat's effectiveness at promoting noticing in dictogloss tasks is supported by a number of previous studies (e.g., Yilmaz, 2011; Yilmaz & Granena, 2010; Zeng, 2017). In particular, Yilmaz (2011) and Yilmaz and Granena (2010) found that text chat could promote more form-related discussions through a dictogloss than a jigsaw task (a task design that requires participants share information with each other but not construct output together). The results of the current study indicated that the slowed pace of communication on text chat did not impede the participants' capacity to notice the targeted language items as they carried out the task. On the contrary, it appears to have

facilitated more noticing that what was possible using the other modes. In accordance with Zeng (2017), the inability to use social cues, along with the capacity of the participants to keep a visual record of their discussions on their computer screens, appears to have allowed them more opportunities to pay closer attention to lexical issues than what was possible f2f.

For the problem solving task, voice chat proved to be the most effective at promoting uptake (Immediate: VC +4.86; F2F +4.0; TC +3.42; Delayed: VC +1.65; F2F +1.58; TC +1.13). The disparity in gain scores was most noticeable between voice chat and text chat. In Sub-Study 1, voice chat and f2f communication produced similar gain scores, with the f2f group doing slightly better in the delayed results (F2F +1.85; VC +1.73; TC +1.57). In Sub-Study 2 though, the voice chat group performed significantly better than the other two groups in the immediate post-test (VC +5.0; F2F +3.26; TC +2.53). Overall, the combined results from both sub-studies showed that voice chat promoted significantly more immediate uptake than text chat, but not f2f communication. Text chat was the least conducive mode at promoting noticing of the targeted language items in the problem solving task. A paired *t*-test of the second text chat group's results in Sub-Study 2 revealed no significant delayed gains were made. During the whole study, this was the only time that any of the six sub-study groups did not achieve a significant improvement on their pre-test results.

For the opinion exchange, there were no significant differences between the gain scores of each mode. Although voice chat achieved the highest immediate and delayed gain score averages overall (Immediate: VC +4.55; F2F +4.38; TC +4.31/ Delayed: VC +2.81; F2F +2.64; TC +2.31), the results varied between the two sub-studies. In

Sub-Study 1, text chat produced the best immediate post-test results (TC +4.64; VC +4.21; F2F +4.15). Voice chat then achieved the best delayed results (VC +2.94; TC; +2.64; F2F +2.55). In Sub-Study 2, voice chat produced the highest immediate post-test results (VC +4.89; F2F +4.63; TC +4.0), while f2f communication achieved the highest delayed gain score average (F2F +2.73; VC +2.68; TC +2.0). Of the three tasks, uptake of the targeted language items in the opinion exchange was the least affected by mode effects.

Comparing the average gain scores achieved by each mode, task design variations appear to have affected text chat the most. For the dictogloss, text chat achieved the best results overall. Long-term retention of the targeted language items was significantly higher than f2f communication. At the same time, immediate post-test uptake for the problem solving task was significantly lower than for voice chat. These findings imply that the features of text chat communication were more greatly influenced by task design variations, either facilitating or obstructing noticing more so than f2f communication or voice chat.

The results of the study also indicated that the levels of uptake achieved through f2f communication and voice chat were more similar in nature than those achieved on text chat. The combined gain scores from Sub-Study 1 and Sub-Study 2 show that, overall, both verbal modes did better than text chat in the problem solving task and the opinion exchange. This finding is supported by Parlak and Ziegler (2017) and Loewen and Isbell (2017) who, likewise, argue that voice chat is more similar to f2f communication than text chat. Jepson (2005) notes that learners communicating on text chat do not adhere to common “turn-adjacency conventions or discourse coherence structures” (p.



82) the same way they do during verbal exchanges. In the present study, the ability to verbalize thoughts appears to have given voice chat and f2f participants an advantage over their text chat counterparts in the problem solving task, and to a lesser extent in the opinion exchange.

The ability to verbally interact arguably makes voice chat more similar to f2f communication than text chat. However, in the current study, not being able to see one another, use gestures, or sit in close proximity, may also have increased the voice chat participants' capacity to notice the targeted language items. Similar to text chat in the dictogloss, the inability of voice chat participants to see one another during the problem solving task and opinion exchange possibly helped raise their awareness. Although the number of voice chat investigations to date are limited, this finding is similar to Bueno-Alastuey (2011) who reported that the lack of visual cues and the perceived extra distance felt between voice chat participants and their partners helped them significantly outperform their f2f counterparts in both presentation scores and post-test results. The voice chat environment was noted to have increased individual practice times and fostered more L2 communication overall. It is possible that the lack of visual support was offset to some extent by the need for learners to only process a single 'verbal' channel (Mayer & Moreno, 2003). In accordance with the findings of Satar and Ozdener (2008), the absence of a visual channel possibly reduced the anxiety levels of learners, allowing them more time to think before speaking. The results of the current study suggest that a reliance on verbal messaging, a lack of visual cues, and an increased sense of distance and time is likely to have helped increase the voice chat participants' cognitive awareness of the targeted language items while carrying out all three tasks. Although some similarities exist between text chat and voice chat

communication, the findings of the current study suggest that perceptions of distance and time between the two SCMC modes were different to some extent, and depending on the task design, resulted in divergent effects on uptake.

### **5.3 COMPARING THE EFFECTIVENESS OF TASK DESIGNS TO PROMOTE L2 UPTAKE**

Out of the three tasks used in the study, the opinion exchange was able to promote the highest levels of uptake overall. As reported in Section 4.8.3, text chat and f2f achieved their highest immediate gain score results. All participants, regardless of mode, also achieved their best delayed gain score results for this task. Pre-test and delayed post-tests showed that the average score increased by two to three points. In terms of promoting long-term retention of the targeted language items, the opinion exchange design particularly showed its effectiveness.

The pre-test results revealed that the participants were already familiar with 50% of the targeted language items on average prior to commencing the opinion exchange. It was the only task that did not include a reading or listening section, so only a minimal amount of textual information was needed to be processed. Essentially, this information consisted of a set of instructions aimed at promoting discussions around the ten leadership traits. Being familiar with half of the targeted language at the outset, along with only a nominal amount of input needed to be processed, is likely to have reduced the cognitive burden placed on the participants (Brindley, 1987). Although the participants engaged in extensive discussions throughout the 90-minute class period, the task procedure itself was not complicated. It allowed the participants relative freedom to choose how they wished to discuss their ideas. As a result, the task

likely afforded the participants significant amounts of time to focus their attention on the targeted language items as they carried it out.

In a previous study, Kitajima (2013) described the opinion exchange as being an unstructured conversation. Its general design was stated as being less effective at promoting language learning than more controlled tasks, like information gaps that have convergent objectives. The opinion exchange in the current study, however, did have structure and goal orientation to an extent. It contained sequenced procedural steps that culminated in the participants reaching a final consensus on leadership qualities they felt were most important for the next Japanese Prime Minister. In relation to the Triadic Componential Framework by Robinson (2001b), the need for the participants to rate the various leadership traits and give their reasons is also likely to have increased the resource-directing cognitive demands placed on them during the task. Having to consider a large number of similar elements (10 adjectives, each one describing a positive leadership trait), potentially raised the learners' cognitive awareness, as attention would have been needed to attend to and manipulate each one (Robinson, 2006). This finding is similar to Michel et al. (2007) who concluded that tasks with a larger number of elements to consider are more likely to promote higher levels of linguistic awareness during learner discussions than ones with fewer elements.

Although the nature of the opinion exchange was likely more challenging than a static task (e.g., describing the scene of a painting), the targeted elements involved did not require extensive manipulation. The participants simply had to talk about the targeted language. In line with the LAC model (Skehan, 2018), not having to alter the targeted language items meant that the participants likely had more time to focus their attention

on pre-verbal message construction at the conceptualization stage of the task. Initially being allocated five minutes to consider which items were more important than others also likely amplified the likelihood that noticing would occur. The increased planning time would have reduced time pressures, which in turn would have helped facilitate syntax building and prime other linguistic elements (Skehan, 2018).

The opinion exchange emphasized fluency over accuracy. Processing the task's limited input was likely easy for most participants. Planning time provided at the beginning of the task, as well as extended discussion periods, meant they did not have to rush to respond. On the other hand, providing reasons why certain leadership traits should be considered better than others would have been challenging and required attention. Having to carry out these prolonged discussions too, would have pushed the participants' speaking skills, particularly those who were less proficient.

Next, the problem solving task produced the second highest levels of uptake in the study. Voice chat achieved its highest immediate post-test gain scores for this task. Both voice chat and f2f participants also achieved their second highest delayed gain score results. Pre-test and delayed post-test comparisons revealed that the average gain score increased by one to two points on average. Furthermore, the pre-test results showed that, prior to carrying out the task, the participants were only familiar with about 21% of the targeted phrasal verbs, making it the lowest recognition rate of all three targeted language sets.

The textual information that needed to be processed in the problem solving task was greater than that of the opinion exchange. The task also placed a higher emphasis on

accuracy. The participants only had one way to fill in the dialogue correctly using the phrasal verbs. Writing in the answers required a focus on meaning, as well as grammatical accuracy. Alternatively, the participants were able to avoid the phrasal verbs if they wished, as the main objective of the task was to fill in the calendar. To a certain extent, it was possible for the participants to still do this, even if they did not complete the dialogue. Although they were encouraged to confer with each other throughout the process, the task's design made it that interaction was more of an option than a requirement. It was observed that quite often, pairs did not immediately start discussing the meaning of the dialogue.

Following Brindley's (1987) framework, the amount of textual information provided in the problem solving task is likely to have challenged the participants more than the opinion exchange in terms of cognitive load. Although the dialogue consisted of a largely familiar topic, two university students talking about their daily lives, a high level of comprehension was needed for the participants to isolate clues in the dialogue and fill in the gaps with the appropriate phrasal verbs. The task design consisted of three main steps that the participants had the option of doing either separately or simultaneously. Based on the Triadic Componential Framework (Robinson, 2001b), having participants reference past and future events (from the dialogue), distinguish between and selectively refer to the phrasal verbs, and possibly provide reasons for why they selected different ones, would have increased the resource-directing cognitive demands of the task. The extent to which the participants attempted to discuss the phrasal verbs would have depended on how confident they were with their choices and how proficient their language skills were. As no planning time was given at the start of the task, the less proficient participants in each group may have felt

pressure to complete the main objective of the task first, filling in the dates on the calendar, before going back to consider how the phrasal verbs fitted into the dialogue.

In accordance with other studies (e.g., Chen, 2007; Karim & Shahwar, 2015; Liao & Fukuya, 2004; Nasarat, 2018; Sara & Mohammadreza, 2013), the semantic complexity of the phrasal verbs and the learners' lack of familiarity with them in the study appears to have led some to try and avoid them. As Nasarat (2018) argues, the difficulty in interpreting phrasal verbs goes beyond grammar to culturally-specific contexts involving various accents, dialects, and speech patterns used by native speakers in different countries. Without the opportunity to live in such contexts, it is very difficult for EFL learners to acquire such knowledge and the confidence to use them naturally. As observed in two investigations by Liao and Fukuya (2004), and Karim and Shahwar (2015), the lower-level participants in the study likely felt less confident to discuss the phrasal verbs than their more proficient peers. For the majority of the first year university students involved in the study, the targeted phrasal verbs in the problem solving task appear to have been outside Krashen's  $i+1$  range of acquisition.

The problem solving task consisted of multiple steps and placed a certain amount of emphasis on grammatical accuracy, which likely increased its difficulty (Brindley, 1987). Although its structure probably helped facilitate the participants' attentional resources at the conceptualization stage, and provided recovery points (e.g., when discussions broke down, learners could have used the task's structure to restart the conversation again), at the formulation stage of speaking, the amount of difficult and unavoidable vocabulary and the task's non-negotiable outcome likely increased the cognitive load felt by them (Skehan, 2018). The problem solving task emphasized

accuracy over fluency. The aim of the task was not so much to have the participants discuss a topic, but to discuss possible answers. The amount of textual information that needed to be processed in the task, and the lack of familiarity the participants had with the phrasal verbs, is likely to have added to the task's overall level of difficulty. As the task did not require the participants to complete the dialogue before filling in the calendar (even though it would have helped), it left open the option for them to avoid the phrasal verbs, or at least limit their focus on them. This design fault and the difficulty of the targeted language items likely diminished opportunities for uptake to occur.

Of all three tasks, the dictogloss recorded the lowest amount of uptake overall. All groups produced their lowest immediate post-test gain scores, with voice chat and f2f delivering their lowest delayed post-test results as well. Only text chat achieved a delayed gain score average higher than that of another task; the problem solving task, making it the group's second best result. On average, the delayed post-test gain scores increased by one or two points on text chat and voice chat, and by zero to one point f2f. These modest results, however, cannot be attributed to the difficulty level of the targeted items, as the pre-test results showed that the participants were already familiar with the majority of them (71%) on average. This was the highest level of pre-test recognition recorded out of all three targeted language sets. Essentially, the task's smaller effect size on uptake can partly be attributed to the participants being able to already identify a large number of them.

The dictogloss required a substantial amount of processing of L2 input. However, it was made easier by the fact that many of the participants were already familiar with

so many of the targeted language items, as well as the task's topic itself, which was about a law that had been introduced in Japan two years prior to the study. Previous research (e.g., Ellis, 2001; Pulido, 2007; Robinson, 2003) has shown that higher levels of background knowledge help with the allocation of attentional resources to input, allowing for better understanding and memory performance. The largely familiar targeted language items would have helped make form-related noticing easier in the dictogloss, as there was less risk of overloading the participants' limited processing capacity (Skehan, 1998). Also, familiarity with the topic of the news article would have lessened the demands on their attentional resources, allowing for more cognitive resources to be allocated to form-related issues (Lee, 2007).

On the other hand, processing the task's input was likely made difficult by it being presented aurally, not visually. Presented as a verbal monolog, the information consisted of more grammatically complex sentence forms than those used in either of the other two tasks. The longer, denser text input, consisting of a large number of facts, likely increased the difficulty level of the task overall (Brindley, 1987). Presenting the input aurally would also have made comprehending the information in the dictogloss more elusive and abstract than it would have been had it been provided in written form. After having listened to the news article twice, the participants had to rely on their notes and those of their partner as reference points while attempting to paraphrase the information. As a result, the ideas that needed to be expressed and manipulated in the paraphrase would have been less accessible, and likely caused problems at the conceptualization stage of speaking (Skehan, 2018).



Seeing as the participants in the study were mostly first year university students, transitioning from a traditional education system rooted in rote learning methods, it is unlikely that many of them would have ever experienced carrying out a collaborative paraphrasing task before. This lack of familiarity possibly led to more attentional resources being needed to understand the broader structure of the task. Tasks like the dictogloss that require transformation of input also mean that learners are less able to access previously used language or pre-packaged solutions to the problems (Skehan, 2018). As a result, trying to understand and paraphrase the information in a timely manner would have reduced opportunities for attention to be given to specific lexical items. Unlike in the other two tasks, the participants had to actually produce a collaborative written text that required a certain level of grammatical accuracy. Using Brindley's (1987) framework, even though the steps to complete the dictogloss were clearly separated and consecutive, the need to process the information and synthesize it likely increased the task's difficulty level considerably.

Considering the variables of the dictogloss in relation to the Triadic Componential Framework (Robinson, 2001b), private planning time was absent as the emphasis was on having the participants construct the paraphrase together. After listening to the news story for a second time, the participants had to share what they had heard with their partner and to start paraphrasing the information immediately. Effectively, they had to share what information they had right after the listening finished, without any need for explanations. If the participants partnered together were proficient enough to catch equally large amounts of information, it is likely that opportunities for them to then compare different elements of the input would have existed. On the other hand, if one or both of the participants lacked the ability to process the input effectively, then such

opportunities would have been reduced dramatically. More proficient pairs would also have been more likely to consider incorporating various grammatical tenses in their paraphrases than those who were less proficient. As a result, the capacity of the last two variables to promote attention to form depended greatly on the proficiency levels of each pair.

The dictogloss design placed a considerable emphasis on language accuracy because the participants had to produce a comprehensible written text together. At the same time, they were not restricted in how they went about it. Familiarity with the topic and the targeted language items likely helped the participants process the input. Nevertheless, the grammatical density of the text and the fact that it could only be listened to twice meant that a large number of cognitive resources would have been needed to process the information, especially for the participants who had less proficient listening skills. Although the pre-test results indicated that recognition of the targeted language items was already high, the modest delayed effect on uptake can also be attributed to the task's difficulty level diminishing opportunities for the participants to pay attention to individual lexical items.

#### **5.4 THE RELATIONSHIP BETWEEN TASK, MODE, AND L2 UPTAKE**

Despite each mode producing similar levels of immediate post-test uptake for the dictogloss (TC +2.93; F2F +2.3; VC +2.26), text chat did better than f2f in delayed post-test uptake in both sub-studies (SS1: TC +2; F2F +0.8; SS2: TC +1.3; F2F +0.89) and overall (TC +1.65; VC +1.36; F2F +0.84). Due to the production cost of typing (Lai & Zhao, 2006) learners are able to produce significantly more output communicating f2f than on text chat (Yilmaz & Granena, 2010; Zeng, 2017). In the

case of the dictogloss though, the challenge of carrying it out through the text medium facilitated better opportunities for noticing to occur. More so than speaking, written language production can increase the attentional resource demands placed on learners (Grabowski, 2007). Although attempting to process the aural input during the dictogloss would have been equally challenging for all participants, having to then share that information and co-construct a paraphrase through the text medium likely increased the participants attention to form. In accordance with Kim (2017), the unique interactional features of text chat, such as “the visual presentation of the discourse, the time lag between the initiation of the message and its receipt, and the absence of paralinguistic cues” (p. 220) likely affected the way the text participants approached the dictogloss differently to their f2f counterparts.

Not having to sit in close proximity or monitor one another’s physical presence during each task is likely to have lowered the text chat participants awareness of social presence. Social presence and issues of face can affect a learner’s willingness to engage in form-related discussions more greatly in f2f exchanges than text chats (Lai & Zhao, 2006; Van Der Zwaard & Bannink, 2014), particularly in collaborative writing tasks. Text chat necessitates longer periods of silence between utterances, which possibly lowered the sense of urgency felt by the participants to respond quickly. Conversely, the pressure felt by the f2f participants to respond promptly, or risk feeling uncomfortable, may have reduced their private thinking time and lowered their capacity to notice individual language items. In accordance with Kim’s (2017) study, the slowed pace of turn taking on text chat is believed to have required longer use of the participants’ cognitive resources as they constructed their paraphrased sentences.

As they waited for responses from their partners, the text chat participants likely had more private thinking time and opportunities to process the input from the dictogloss more intensely. To a lesser extent, the lack of visual cues may have also helped the voice chat participants do the same. Still having to communicate verbally, the inclination to respond quickly would have likely been stronger on voice chat than text chat, but perhaps not as great as if they were in a f2f exchange. Despite there being no significant difference between the delayed post-task results for the voice chat and f2f participants, these factors may offer a reason why voice chat was able to achieve better long-term uptake overall.

For the problem solving task, text chat demonstrated that it was the least successful mode to facilitate uptake. The difference was most noticeable between text chat and voice chat. Of the three modes, voice chat achieved the highest immediate and delayed gain scores overall, demonstrating a significantly more positive immediate post-task effect on uptake than text chat. A lack of familiarity with the targeted language items used in the task, coupled with design features that allowed for limited collaboration, is suspected to have weakened the text chat participants' capacity or willingness to attend to the phrasal verbs more so than those who used the other modes. Discussing the input required the participants to point things out on the calendar or at specific points in the dialogue. For those using text chat, being able to do this would have been a much greater challenge than f2f or on voice chat. Gaps in the dialogue were also not clearly numbered, possibly increasing the time it took the text chat participants to direct each other's attention and discuss the phrasal verbs.

Compared to the other tasks, the problem solving task's design compounded the likelihood for communication breakdowns to occur on text chat. Such breakdowns likely made turn-taking problematic and ran the risk of deteriorating into split negotiation routines, a phenomenon commonly seen on the mode (Baralt, 2013; Lai et al., 2008; Smith, 2003). As in a study by Salbego and Tumolo (2020), it is possible that form-related negotiations became split when the participants did not attempt to clarify or resolve communication problems immediately. It is also possible that a lack of strict turn adjacency caused long initial delays between triggers and responses to form-related issues, resulting in meaning negotiations getting side-tracked or forgotten as triggers went unanswered (Smith, 2003). In accordance with the findings of Baralt (2013), the tasks in the study that were more simple and required less turn-taking appear to have facilitated higher rates of noticing on text chat. Increased task complexity seems to have had a negative effect on turn adjacency and noticing on text chat. Baralt observed in her own study that breakdowns in turn adjacency resulted in confusion, frustration and cognitive overload, causing participants to sometimes miss feedback entirely.

The process of discussing the problem solving task's input would have been easier on voice chat than text chat. Although the inability to read visual cues or use gestures was the same, being able to communicate verbally likely helped reduced the potential for misunderstandings to occur. Similar to the findings of Yanguas (2010), it is feasible that, in this case, split negotiation routines were more common on text chat than voice chat. At the same time, the inability to use gestures was also unlikely to have impeded meaning negotiations. In Yanguas's study, the learners had to explain the names of different tools in Spanish to each other, making the ability of f2f participants to gesture

them an advantage. However, in the current study, gesturing the phrasal verbs' meanings would not have been possible. Rather, having to rely solely on verbal communication likely raised awareness of the targeted language items on voice chat. Having a lowered sense of social presence also may have promoted more private thinking time than f2f communication. For text chat, the communication difficulties related to task design are suspected of having offset any potential benefit the added time would have afforded its participants.

For the opinion exchange, voice chat again facilitated the highest levels of uptake of all three modes. The combined results again revealed that text chat was the least successful at promoting immediate post-test and delayed post-test uptake. However, the differences between each mode was minimal. The opinion exchange did not necessitate the co-construction of any type of output besides a final list of leadership traits. The simplicity of the task's design seems to have put all of the participants on a more equal footing than the other tasks. The main objective was to simply have the learners share their opinions about different leadership qualities, while at the same time, allowing them opportunities to learn the lexical items brought up during their discussions. The more open-ended nature of the opinion exchange likely lessened the potential risk of the participants losing face or becoming disorientated by turn adjacency issues as they did not have to concern themselves with being right or wrong or pointing out specific things on their worksheets.

At the same time, it is possible that verbal communication was still able to allow the voice chat and f2f participants a slight advantage over their text chat counterparts regarding noticing and uptake during the opinion exchange. Having the capacity to

physically say the words and hear them being spoken appears to have helped those participants familiarize themselves somewhat more with the targeted lexical items than those who communicated solely through text chat. This finding is supported by an earlier investigation carried out by Edwards and Young (2016), which found voice chat participants to have a higher rate of delayed lexical uptake than their text chat counterparts. Comparisons of recordings and transcripts from the study revealed the targeted language items were spoken between 48% to 60% more often on voice chat than they were typed during the text chat discussions. Lacking the permanency of recorded messages on their computer screens was argued to force the voice chat participants to say the targeted language items more frequently. This included asking each other how to spell them. As a result, the increased output of the targeted language items likely enabled the voice chat participants more opportunities to process the information more deeply and recall them more successfully after a delayed period of time.

Furthermore, voice chat's marginally higher immediate and delayed uptake suggests that the inability to see one another possibly facilitated slightly more private thinking time and heightened awareness of the targeted language items than f2f communication. Speaking about text-based SCMC, but equally applicable to voice chat, Smith (2003) argues that "CMC removes, or at least reduces, many of the para- and non-linguistic aspects of face-to-face speech that facilitate verbal communication" (p. 47), such as using body language, gestures, or facial expressions. In Yanguas (2010), this was seen to impede the voice chat participants' ability to describe the pieces of equipment illustrated on their different worksheets. However, for the opinion exchange in the current study, the inability to use paralinguistic cues cannot be as strongly linked to

uptake since all participants were provided with the same worksheet, which listed all of the targeted lexical items and their Japanese meanings. In short, gesturing was not needed. Although anecdotal, the main difference between f2f and voice chat was the proximity to which the participants sat together and whether or not they could see each other as they engaged in this lengthy discussion. The need to adhere to standard conversational norms (e.g., avoiding long silences, keeping up chitchat) may have been felt more strongly by the f2f participants than those communicating on voice chat, slightly detracted from their opportunities to store the targeted language items to memory.

## **5.5 THE EXTENT TO WHICH TIME PLAYED A ROLE**

Comparing uptake with the perceptions of time given by the three groups in Sub-Study 2, a number of interesting patterns emerged. First, a noticeably smaller percentage of the text chat participants stated that they had sufficient time to complete the opinion exchange or problem solving task compared to those using the other modes. Less than 50% of all text chat participants in Sub-Study 2 claimed to have had adequate time to carry out these two tasks. On the other hand, 90% or more voice chat and f2f participants stated that they had enough time or even excess time to do the same. Second, while the voice chat and f2f participants demonstrated similar perceptions of time for all three tasks, one difference was the slightly higher number of voice chat participants who claimed to have had excess time to complete the tasks. The data suggests that lacking some paralinguistic and non-linguistic aspects of communication helped voice chat participants maintain more focus on completing each task. As a result, concerns about time constraints may have become less of an issue which allowed them greater ability to pay attention to form-related issues. This finding is



similar to the results of Yamada and Akahori (2009) who reported that the inability of video conferencing participants to make eye contact with each other (due to camera positioning) increased their capacity to focus on the task and its targeted expressions. Likewise, Guichon and Cohen (2014) also found that the lack of social presence experienced by voice chat participants helped them to increase their focus on task input and possibly compelled them to concentrate more.

Of all three tasks, the three groups' perceptions of time were most closely matched in the dictogloss. The number of voice chat and f2f participants who stated they had sufficient time to complete the task decreased by 20%. At the same time, the percentage of text chat participants who claimed they had enough time increased to 50%. This was the only time that a majority of the text chat participants gave a positive response to the time allowances provided for a task. Compared to the other tasks, the dictogloss appears to have reduced the amount of time-related anxiety felt by those using text chat, while at the same time, increasing it for those who interacted verbally. Of all three tasks, the dictogloss design appears to have neutralized time-related mode effects the most.

As mentioned previously, the dictogloss was the only task that required participants to co-construct a written text. As noted by other researchers (e.g., Fiori, 2005; Sauro, 2009; Sotillo, 2005), the capacity to scroll backwards and forwards on their computer screens is likely to have helped them do this, allowing them to efficiently attend to the sentences they were attempting to collaborate on. Payne and Whitney (2002) state that the functionality of text chat allows opportunities for learners to refresh their memories. For the dictogloss, the task necessitated the participants recall information provided

by their partners, including possible suggestions on how to construct the paraphrased sentences. Being able to scroll back and find that information without having to verbally check with a partner may have helped streamline the process on text chat. Furthermore, as Adams and Nik (2014) state, the production and transmission of messages on text chat are temporally adjacent to each other; meaning before they are transmitted, they must first be composed and edited, which results in “additional opportunities for learners to focus-on-form during production off-line” (p. 72).

Although co-construction of a paraphrase would have been time consuming on text chat, when the objective was synthesis of the input (including the targeted language items), the mode provided learners with increased private thinking time that appears to have benefited them. Despite the overall amount of learner output produced on text chat likely being less than that produced f2f or on voice chat, in the case of the dictogloss it may not have mattered so much. Paraphrasing the input would have required each pair to give careful thought to how best to synthesize the information in just a few short sentences, meaning the focus of their discussions would have orbited around their composition. As a result, the increased private thinking time and the ability to scroll back over previous utterances possibly helped the text chat participants feel less anxiety about the time restrictions imposed on them. Conversely, the challenge of having to do the task f2f or on voice chat may have increased anxiety levels about time, due to the fact that they had to discuss their composition verbally.

## **5.6 MODE EFFECTS ON THE LEARNERS’ PERCEPTIONS OF TASKS**

The feedback provided by the participants in the post-study questionnaire yielded a number of interesting results. First, a connection was found between task enjoyment

and uptake. Regardless of mode, the majority of the participants voted the opinion exchange as being the most enjoyable task, particularly in the f2f and text chat groups, where more than 60% stated so. Two common themes found in the feedback were: (1) the interaction felt natural; and (2) having to give their reasons, while challenging, was also satisfying. Irrespective of the medium, it is evident that a large number of participants in the study enjoyed the opinion exchange because they felt it promoted the most meaningful discussions. The positive feedback correlated with the high scores achieved f2f and on text chat in the immediate post-test and through all three communication modes in the delayed post-test.

Unlike in the text chat and f2f groups, however, there was a much closer divide between the voice chat participants who enjoyed the opinion exchange (41%) or the problem solving task (36%) the most. Particularly in Sub-Study 2, the problem solving task received a significant increase in positive feedback. A common reason given was that it was fun working with a partner to try and solve the riddle. Six such comments were noted, compared to only three for f2f and one for text chat. Accordingly, those using voice chat appeared to have felt more at ease working on this task with their partners than those using the other modes, particularly text chat. Even though much of the positive feedback was given in Sub-Study 2, the voice chat groups in both sub-studies achieved their highest immediate post-test gain scores through the problem solving task, achieving higher overall results than the other two modes.

Next, mode type appears to have affected the participants' perceptions of task difficulty. Compared to f2f and voice chat, the feedback from the text chat participants was much more decisive in their selection of the task they felt was the easiest (Opinion

exchange - 62%) and the most difficult (Dictogloss - 69%). The ratio of votes given to other tasks in both categories remained low at 14% to 24%. Most of the students using text chat believed the opinion exchange was the easiest because it was simply a matter of sharing their ideas and not worrying about giving right or wrong answers. On the other hand, the dictogloss was considered the most difficult because comprehension of the input was hard, typing about it was tough, and communication sometimes became confusing. Comparing the communicative objectives of both tasks, having to simply express opinions versus co-constructing output, strongly influenced the participants' perceptions of which task they felt was easier or more difficult to perform on text chat.

At 62% of the vote, the majority of the text chat participants also stated that they disliked the dictogloss the most. None of the reasons stated, however, mentioned that it was not interesting. Nearly all comments involved describing some facet of the task's difficulty. In this instance, the negative feedback cannot be linked to any detrimental effect on uptake. On the contrary, it suggests that the increased cognitive demands actually resulted in more awareness of the targeted language items compared to those who carried it out using one of the other modes.

For f2f and voice chat, the feedback was much more divided. There was almost an even number of participants who stated the dictogloss or the opinion exchange was the easiest. For the f2f mode, only one more participant voted the opinion exchange (41%) over the dictogloss (38%). For voice chat, the percentage of votes for both tasks was even at 39%. The participants from both groups commented on how easy it was to share what they heard in the listening section and to match their ideas in the dictogloss.

Compared to text chat, having the capacity to verbally exchange their ideas as they co-constructed their paraphrases seems to have increased the ease with which the voice chat and f2f participants felt they could carry out the task.

At the same time, many f2f and voice chat participants also voted the opinion exchange as being the most difficult task. The ratio consisted of 46% for f2f and 37% for voice chat. Such a significant split between those who felt it was easy or difficult was not seen in the feedback from the text chat participants. Only 17% of the text chat participants claimed the opinion exchange was the most challenging of the three. This result suggested that verbal communication increased the cognitive load more so than texting, during the opinion exchange.

For f2f, it is evident that some participants felt more confident than others to sit in close proximity and exchange their opinions verbally. Feedback from the f2f participants included that it was hard to explain their reasons, it took time to express themselves clearly, and the theme was difficult to discuss. As Robinson (2001a) explains, learners' perceptions of task difficulty can differ, depending on affective variables like motivation and aptitude. A learner who is more motivated or who has a higher aptitude is more likely to find a task easier than one who is less motivated or who has less ability. For the opinion exchange, the participants who were the less proficient English speakers are believed to have found the opinion exchange more difficult to do verbally than on text chat, particularly in a f2f setting. The ratio of f2f participants who voted the opinion exchange as being the most difficult was noticeably more than that of voice chat participants (18 - 46% versus 14 - 37%). The number on voice chat who voted for it was equal to the number who voted for the dictogloss (14

- 37% versus 14 - 37%). The voice chat participants' post-questionnaire feedback showed that not only was there a clear divide between those who felt the opinion exchange was the easiest or most difficult task, but also the dictogloss as well.

The fairly equal divide among voice chat participants who selected the dictogloss or opinion exchange as being the most difficult suggests that the ability to verbalize messages but not use certain para-linguistic cues created a split in their perspectives. Feeling more pressure than the text chat participants to respond quickly is likely to have increased the cognitive load experienced by the weaker voice chat participants during the opinion exchange. Likewise, the inability to use gesturing or visual cues to aid comprehension appears to have increased the perception that the dictogloss was hard. Some reasons given included not knowing what to say, needing to memorize what was being said quickly, and not being able to explain the information well.

Unlike for text chat, there was much more of an even spread of opinions as to which task the f2f and voice chat participants disliked the most. Although all groups voted the dictogloss as being the most unpopular, the percentage cast by the f2f and voice chat participants for all three tasks was more closely divided. For text chat and voice chat, a correlation could also be made between the large percentage of participants who voted the dictogloss as being the most disliked, as well as the most difficult task (Text chat - 69%; Voice chat - 37%). The data suggests that, while the f2f participants disliked the dictogloss, they did not find it as challenging as those using the SCMC modes, suggesting another reason why significantly less delayed uptake was achieved compared to those who did it on text chat. Some reasons why the f2f participants

disliked it were that it was monotonous, it was hard to catch everything that was being said, and it was hard to summarise.

## **5.7 AFFORDANCES OF SCMC MODES IN THE EFL CLASSROOM**

This study revealed that voice chat and text chat were able to promote uptake during task-based discussions as effectively as, or at times more effectively than, f2f communication in an EFL classroom setting. Uptake comparisons of the 30 targeted lexical items showed that, regardless of mode, most participants achieved significant learning gains. The gain scores of the voice chat participants, however, demonstrated that the voice chat mode was overall the most effective. Voice chat yielded the highest amount of immediate and delayed uptake for the opinion exchange, problem solving task, and the study as a whole. These results validate the mode's effectiveness at promoting language awareness in EFL classroom contexts.

The study also showed that voice chat was best suited at promoting linguistic awareness through tasks that did not necessitate joint construction of written output. Compared to f2f and text chat, voice chat facilitated greater awareness of task input during the opinion exchange and problem solving tasks. Needing to engage their partners verbally but not being able to see them physically appears to have helped the participants maintain more focus on the targeted language items. In accordance with Edwards and Young (2016), lacking a visual record of their previous utterances, like that afforded on text chat, likely increased the frequency with which the voice chat participants spoke the target language items, or heard them spoken, during their exchanges. For the problem solving task, also, being able to verbally guide their partner's attention to specific parts of the dialogue likely made it easier for them to

discuss the targeted language items than by texting. As a result, the voice chat participants were believed to be less inclined to avoid discussing the phrasal verbs than their text chat counterparts.

Having features similar to both f2f communication and text chat, voice chat appears to force learners to utilize linguistic resources that are often superseded by visual cues in f2f exchanges (Yanguas, 2010). Moreover, unlike text chat, the mode also requires learners to deal with increased phonological issues that threaten comprehension (Li & Lewis, 2018). Yanguas (2010) found that communicating through voice chat in his study pushed the participants to provide more elaborate responses during task-based discussions than either video chat or f2f communication. Although the increased challenge of doing so in that study was suggested to have hindered overall comprehension levels, the pedagogical affordances of the mode should not be ignored. Having the capacity to provoke interaction that relies exclusively on verbal interaction, voice chat has the power to foster greater linguistic awareness and push each learner's speaking ability. In certain EFL classroom contexts, it can be better for teachers at times to utilize voice chat to test their learners' listening and verbal production skills. This no-frills version of verbal communication can benefit those learners who are strongly motivated to improve their speaking skills (Li & Lewis, 2018).

For the dictogloss, the results of both sub-studies demonstrated that text chat could generate significantly higher levels of delayed uptake than f2f communication. The dictogloss was the only task that required learners to coordinate their efforts to produce output in the form of a paraphrase. More so than the other tasks, the dictogloss strongly emphasised the need for grammatical accuracy and cooperation. The text chat medium



appears to have afforded the participants, working together, more time to process the input, before, and while they discussed it. Compared to verbal communication, text chat provided learners with time between the production and transmission stages of messaging. Text chat also allowed the participants to visually review their previous utterances, helping to streamline the writing process. In an EFL classroom setting, text chat may at times provide learners with more opportunities to reflect on language output during collaborative writing tasks than f2f communication. As long as the task's design is not overtly complicated, the additional time needed for learners to send each other messages can be used to enhance reflection and facilitate higher levels of linguistic awareness.

Finally, the post-questionnaire results showed that the participants' impressions of using SCMC in the classroom were overall very positive. Over three-quarters of these groups claimed to have liked using text chat or voice chat to practice communicating in English. Over four-fifths also stated that they were positive about continuing to use both SCMC modes to practice English periodically in the future. These results demonstrate that, while many of the participants understood the challenges of communicating on text chat and voice chat, and how different both modes were from f2f communication, the majority still believed that bringing these communication modes into the EFL classroom could benefit their learning. Although the feedback showed that most participants from both groups did not consider either SCMC mode a replacement for f2f communication, it did suggest that many thought both could be used to complement it.

## 5.8 SUMMARY

The results of the study indicate that using SCMC in the EFL classroom can help promote TBLT. The effectiveness of text chat and voice chat to facilitate uptake in the study implies that a wider range of EFL learners can benefit from using these communication tools in the classroom. This study has helped expand L2 teachers' knowledge about the affordances of text chat and voice chat, how they differ from f2f interaction, and the circumstances in which they can most effectively promote learning. One shared advantage both SCMC modes have is the ability to block out many of the social norms that are connected to f2f communication. Even in classroom settings, being able to reduce the physical presence of a fellow interlocutor can allow learners the capacity to feel more relaxed and focused, as well as increasing their capacity to notice more language-related issues.

The greatest advantage of text chat was that it enabled learners to visually evaluate their messages before sending them and to have extra time to review both input and output while awaiting responses. In the study, these features were seen to be most valuable at promoting noticing when the participants engaged in collaborative writing through the dictogloss. The greatest advantage of voice chat was its ability to force the participants to rely solely on their verbal skills to achieve each task's goal. Having the capacity to speak to but not to see their partners provided fewer opportunities for them to become distracted by their partner's physical presence. At the same time, the ability to speak also reduced the potential for confusion which, depending on the task, appeared more likely to occur on text chat. These features benefitted the voice chat participants the most in the opinion exchange and the problem solving task. They

allowed the participants more occasions to attend to the input and resulted in them achieving higher levels of uptake in these two tasks.

## CHAPTER 6

### CONCLUSIONS AND IMPLICATIONS

#### 6.1 CONCLUSIONS

##### 6.1.1 MODE AND TASK EFFECTS ON L2 UPTAKE

Although the overall results in the study indicate that the immediate or delayed gain scores achieved on all three modes (i.e., text chat, voice chat and f2f) were similar, the separate results from each task also revealed a number of differences. First, the text chat mode was the most successful at facilitating immediate and delayed uptake in the dictogloss task, significantly outscoring f2f communication in the delayed post-test results. In this instance, the mode's slower pace of communication likely increased awareness of the targeted language items in the task. The challenge of having to co-construct a paraphrase from input presented aurally demanded a substantial amount of processing, and having to share that information textually slowed the participants' interactions compared to those who did it verbally. Text messaging required sustained use of the participants' cognitive resources and increased opportunities for them to consider the targeted language items presented on their worksheets. Not having to be concerned about social presence as much as in a f2f exchange (or to a lesser extent, a voice chat exchange) likely lowered the text chat participants' anxiety levels (i.e., not having to worry so much about losing face if they made a mistake) and stimulated a more abundant exchange of ideas.

Second, the text chat mode facilitated the least amount of uptake in the problem solving task, in both sub studies and overall. In Sub-Study 2, the voice chat mode

achieved significantly higher uptake than the other two modes in the immediate post-test but not the delayed post-test. The voice chat mode also produced significantly better immediate post-test results overall, compared to the text chat mode. For the problem-solving task, having the capacity to verbally exchange ideas was more effective at promoting noticing than text chatting. Generally, most participants lacked familiarity with the phrasal verbs. Coupled with the difficulty the text chat participants experienced pointing out differences on their worksheets, and the option to avoid form-related discussions, appears to have lowered their overall focus on the targeted language items. At the same time, while the voice chat participants also lacked visual clues and the ability to use gestures, having to rely completely on verbal messaging not only mitigated potential communication breakdowns, but also increased awareness language through a need to carefully explain textual clues on their worksheet to each other and repeating verbalizing the targeted items.

Third, out of the three tasks, communication mode appeared to have affected uptake the least for the opinion exchange. Although the voice chat mode again obtained the best results in both sub-studies, there were no significant differences in the combined results. Only in the immediate post-test for Sub-Study 2 did the voice chat mode manage to achieve a more significant result than the text chat mode. The simple design of the opinion exchange, the minimal amount of input the participants needed to process, the task's straightforward instructions, and the task's reduced emphasis on accuracy (i.e., giving the participants the freedom to express themselves however they wished) appear to have negated mode effects to a large extent. The voice chat participants again achieved slightly higher levels of uptake likely because they had to rely on verbal messaging, having to repeat the targeted language items more often than

those who communicated f2f (i.e., who had the option of physically pointing them out to each other), or text chat, which left a record of the words on the participant's screen.

Table 6.1  
*Summary of Key Findings and Task Design Consequences*

	Key Findings	Task Design Consequences
Text Chat	<ul style="list-style-type: none"> <li>- facilitated the most uptake in the dictogloss</li> <li>- facilitated the least uptake in the problem solving task</li> </ul>	<ul style="list-style-type: none"> <li>- most conducive to promote uptake in collaborative writing tasks with simple design features</li> <li>- least conducive to promote uptake in tasks with complex design features (e.g., multiple steps, heavy focus on worksheet content) that promote split-screen affects</li> </ul>
Voice Chat	<ul style="list-style-type: none"> <li>- facilitated the most immediate post-task uptake in the problem solving task</li> <li>- facilitated the most uptake overall</li> </ul>	<ul style="list-style-type: none"> <li>- most conducive to promote uptake in speaking tasks that demand a high attention on language input</li> <li>- most conducive to promote uptake in speaking tasks that necessitate private thinking time and processing of large amounts of information</li> </ul>
Face-to-Face	<ul style="list-style-type: none"> <li>- facilitated the least amount of uptake in the dictogloss</li> <li>- facilitated comparatively similar amounts of uptake as voice chat in the problems solving task and the opinion exchange.</li> </ul>	<ul style="list-style-type: none"> <li>- least effective at promoting uptake in collaborative writing tasks</li> <li>- most conducive at promoting uptake in speaking tasks what necessitate the use of gestures and benefit from eye contact</li> </ul>

### 6.1.2 MODE EFFECTS ON PERCEPTIONS OF TIME

Feedback from the participants in Sub-Study 2 showed that time perceptions for all three tasks were very similar among those who were able to communicate verbally with one another. Only around 10% of the voice chat and f2f participants stated that they did not have enough time to complete the opinion exchange or problem-solving task, compared to more than 50% of those who used the text chat mode. For these tasks, the lower overall levels of uptake produced on the text chat mode, especially for

the problem-solving task, suggest a link between text messaging, increased time anxiety, and a reduction in language/input awareness. On the other hand, 20% more voice chat and f2f participants stated that they needed extra time to complete the dictogloss, compared to 7% fewer of those who used the text chat mode. Although the percentage of the text chat participants who felt they had enough time was still considerably less than in both verbal groups (50% vs. 70%), the higher levels of uptake for this task (higher than both the voice chat and f2f modes) indicate that time played less of a role in the participants' capacity to notice the targeted language. Having time to consider their messages before sending them, coupled with the capacity to scroll back over previous utterances, appears to have helped the text chat participants carry out the dictogloss effectively. These mode effects specific to the text chat mode offset the prospect that attention to form would be impeded by time limitations.

While the ratio of the voice chat and f2f participants who responded affirmatively to the question of time was fairly even, the percentage of those who claimed to have had too much time was not. Out of the 66 voice chat responses received, 9 indicated there was sometimes an excessive amount of time to complete a task (Opinion Exchange - 4; Dictogloss - 3; Problem Solving Task - 2). Conversely, an equal number of f2f responses revealed only 4 such reactions (Opinion Exchange - 1; Dictogloss - 2; Problem Solving Task - 1). Although only circumstantial, this result suggests that the voice chat participants generally felt they had a more abundant amount of time to consider the targeted language items than those in either of the other groups.

### 6.1.3 MODE EFFECTS ON TASK DESIGN PERCEPTIONS

From the post-questionnaire data, it is evident that the participants' perceptions of tasks were the most conclusive for those using the text chat. For all four categories (i.e., most enjoyable, easiest, most difficult, and most disliked), the majority of text chat participants decisively selected one task over the others. Of all the participants using the mode, the opinion exchange was voted as the most enjoyable by 62% and as the easiest by 62%. The dictogloss was selected as the most disliked by 62% and as the most difficult by 69%. For the f2f participants, the opinion exchange was also clearly selected as the most enjoyable task by 64%. However, for the other three categories (the easiest; most difficult; most disliked), the vote was less conclusive. The dictogloss was chosen as the most disliked (41%) and the opinion exchange was selected as both the easiest (41%) and the most difficult task (46%). Finally, the feedback from the voice chat participants was the most divided. For each category, the perceptions were fairly evenly split between two or all three of the tasks. As with the participants using the other two modes, the majority of the voice chat participants felt that the opinion exchange was the most enjoyable at 41%. At the same time, 36% also selected the problem-solving task. For the most disliked task, over 30% voted for each of the tasks. For the easiest and most difficult task, there was an even split between those who selected the opinion exchange (39%; 37%) or the dictogloss (39%; 37%). Compared to text chat, and to a lesser extent, f2f, the mode effects of voice chat do not appear to have promoted such strong collective sentiments about a particular task being one way or another.

For the text chat participants, the inability to see or hear their partner while communicating helped make the opinion exchange a clear favourite. The task's simple



design and promotion of open-ended discussions reduced the potential for split screen effect or confusion about what to say next. Conversely, the text-only environment increased the perception of the dictogloss as being a difficult task. Having to first rely the input they heard from the listening section, and then collaborate on a paraphrase necessitated very careful consideration about what to type before sending a message, and led to prolonged periods of time waiting for responses.

For the f2f participants, the dictogloss was rated as the second easiest task, or the least difficult in those two separate categories. Evidently, having the capacity to see their partner, read each other's facial cues, and verbally exchange information largely made the participants feel that the task was not so difficult. On the other hand, 46% voted the opinion exchange as being the most difficult, much larger than the percentage of text chat participants who felt the same (17%). In this instance, it was clear that a larger number of the f2f participants struggled to keep the open-ended discussion going in the time allocated. For the less confident speakers who interacted f2f, having to sit in close proximity to one another and adhere to social norms (respond in a timely fashion) likely added to the pressure they experienced. At the same time, those using the text chat mode were afforded more distance from their partners and time to think before responding, which probably helped lower anxiety levels.

The inability of the voice chat participants to see each other but still carry on verbal messaging highlights the mode's similarities to both text chat and f2f communication. This amalgamation is indicative of the way there was an even divide between those who voted for either the dictogloss or opinion exchange as being the most difficult task. As with the text chat mode, lacking the capacity to see their partners increased

the difficulty level of the dictogloss to a certain extent, making it more challenging to share information. At the same time, having the capacity to speak verbally meant that the participants were under more pressure than their text chat counterparts to respond promptly throughout the opinion exchange. Over the duration of the task, having to do so likely proved harder for the less proficient speakers. The voice chat mode is unique in that it can draw on some of the positive and negative attributes of both modes. As a result, the participants' perceptions of the tasks were possibly counterbalanced by these competing effects, which led to a more even array of perceptions.

## **6.2 LIMITATIONS**

Throughout the process of this investigation, some limitations presented themselves that are addressed here. First of all was the use of successive immediate post-tests to measure uptake. Seeing as all groups in both sub-studies performed three treatments, maturation effects naturally became an issue. Some participants, if not all, likely were able to anticipate an immediate post-test during the second or third treatment. To offset this problem, each group carried out the tasks in a randomized order. Nevertheless, the possibility that the study's repeat measures design affected uptake does need to be considered when assessing the results.

The second limitation deals with the targeted language items used in each task. As the pre-test results revealed, the number of items familiar to the participants per task at the beginning was not evenly distributed. The majority of the participants were most familiar with the targeted language items from the dictogloss and least familiar with those from the problem-solving task. Although this general trend held for all six groups, there was still a certain amount of variation in the pre-test results of each group in both

sub-studies. This was most noticeable in Sub-Study 1. In retrospect, the inclusion of a pilot study would have strengthened the reliability and validity of the findings.

Another limitation of the study related to the suitability of each participant's data set. In order to be included in the analysis, each participant had to be present at each stage of the data collection, including for the pre-test, post-tests and questionnaires. Depending on the group, attendance sometimes varied, meaning that the data sets for some groups ended up being larger than others. Compared to the f2f and voice chat classes, which had 39 and 38 respectively, the text chat finished off with only 29 participants. Despite the class times being changed in Semester 2, the number of data sets suitable for analysis for the text chat mode remained smaller than those for the other two modes.

In addition, the participants' impressions of time on task were only measured directly in Sub-Study 2. This meant that the conclusions drawn to answer the second research question was largely based on only 50% of the participant samples in this study. After initial analysis of the data from Sub-Study 1, and before commencing Sub-Study 2, it became apparent that the participants' feedback in the post-questionnaire regarding time on task was lacking. This led to the inclusion of a new survey question in Sub-Study 2, which was administered to the participants immediately after each immediate post-test. This data was used to represent a general impression of those using each mode. However, it cannot be taken to definitively reflect the impressions of the participants who took part in Sub-Study 1.

### **6.3 IMPLICATIONS AND FUTURE RESEARCH**

The results of this study have demonstrated that SCMC can positively impact learning in EFL classroom settings. Text chat and voice chat provide unique environments that offer teachers the capacity to stretch the communicative abilities of their learners in ways that f2f interaction cannot. Depending on task design, the added challenge of communicating through text chat or voice chat has the potential to either stimulate or impede a learner's awareness of L2-related issues. At times, the capacity of voice chat to put space between speakers and have them rely completely on verbal messaging can lead to closer attention to form-related issues. In this study, the voice chat mode promoted the most immediate and delayed uptake during the opinion exchange and problem-solving task. Compared to f2f interaction, the results were consistently better overall despite not being significantly different. For these task types, creating conditions where social presence is reduced but verbal communication is permitted may allow EFL learners more time to notice new L2 input during these types of task-based discussions.

At the same time, more complex task designs appear to reduce the effectiveness of text chat at promoting L2 uptake. The study showed that communication that focuses more on worksheet content can diminish a learners' attention to form-related issues when texting. Compared to the other tasks, the problem-solving design required the participants to point things out to each other on their worksheets in order to carry on their discussions. This was a bigger challenge to do on text chat than the other modes. In contrast, the less restrictive conditions of the dictogloss and opinion exchange reduced the potential for confusion or communication breakdowns to occur. Particularly for the dictogloss, the co-construction of a paraphrase worked well to

promote uptake on the text chat mode. It allowed learners to easily scroll back over their previous utterances and to block out potential visual or verbal distractions, which can increase attention to form-related issues.

Differences in the way SCMC and f2f communication affects L2 uptake are hard to detect in small groups. In future studies that investigate the relationship between task design and communication mode, larger participant samples are needed to better isolate factors that can have a significant impact on learning. To reduce the risk of conditioning, the use of different sample groups for each round of treatments is desirable. When measuring uptake, careful consideration also needs to be given to the type of targeted language used in the tasks and how to present it. Incorporating the same targeted language items into a number of different task designs is one possible solution. The advantage of this would be that the researcher could be assured that the difficulty level of the input presented in each task would be exactly the same. Another option would be to use the same task, but to change certain features that have the potential to either increase or decrease the participants' cognitive load. In this type of research design, sample groups could be assigned to a difficulty level rather than a communication mode, with each taking turns at using the different modes under investigation to carry out the various tasks and to provide qualitative feedback. Moving forward, SCMC research must continue to identify design features that are most suitable for L2 learners to carry out tasks in online environments. This study offers a rationale for integrating SCMC technology into the EFL classroom. Future projects must build on these findings to provide more in-depth understanding about the dynamics of learning through both online and f2f communication.

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## APPENDIX A: PRE-TEST/ DELAYED POST-TEST

Match the Japanese words and phrases with the correct English Translations

近づきやすい	Approachable
	Affable
年金	Pension
	Tension
想定する	Figure on
率直な	Candid
公式に	Officially
現れる	Turn up
	Turn down
カリスマ的な	Charismatic
	Chromatic
申し込む	Apply
真剣にとりかかる	Knuckle down
刺激を与える	Inspiring
健康保険	Healthcare
整理する	Sort out
	Sort of
謙遜な	Humble
	Humming
性別	Gender
見つけ出す	Find out
情熱的な	Passionate
	Painful
税金	Taxes
	Tacos
延期する	Hold off
	Hold on
革新的な	Innovative
	Introverted
認識する	Recognized
	Reorganise
(答えなどを) 見つける	Figure out
知識のある	Knowledgeable
法定の／合法の	Legal
	Liable
～の方へ向かう	Head up to
	Head on to
支える力になる	Supportive
成人期	Adulthood
目標を見定めた	Goal oriented
先にどうぞ	Go ahead
同意する	Consent

つるむ  
Consist  
Hang out  
Hang on

\* All items in this list are in order. The target language with no Japanese translations were distractors. The items were randomly shuffled for the actual test.

## APPENDIX B: IMMEDIATE POST-TESTS

**Opinion exchange task:** Match the Japanese words and phrases with the correct English Translations

近づきやすい	Approachable
	Affable
率直な	Candid
カリスマ的な	Charismatic
	Chromatic
刺激を与える	Inspiring
謙遜な	Humble
	Humming
情熱的な	Passionate
	Painful
革新的な	Innovative
	Introverted
知識のある	Knowledgeable
支える力になる	Supportive
目標を見定めた	Goal oriented

**Dictogloss task:** Match the Japanese words and phrases with the correct English Translations

年金	Pension
	Tension
公式に	Officially
申し込む	Apply
健康保険	Healthcare
性別	Gender
税金	Taxes
	Tacos
認識する	Recognized
	Reorganise
法定の/合法の	Legal
	Liabe
成人期	Adulthood
同意する	Consent
	Consist

**Problem solving task:** Match the Japanese words and phrases with the correct English Translations

想定する	Figure on
現れる	Turn up

真剣にとりかかる	Turn down
整理する	Knuckle down
	Sort out
	Sort of
見つけ出す	Find out
延期する	Hold off
	Hold on
(答えなどを) 見つける	Figure out
～の方へ向かう	Head up to
	Head on to
先にどうぞ	Go ahead
つるむ	Hang out
	Hang on

## APPENDIX C: PILOT PRE-TEST

<b>State</b>	<b>Started on</b>	<b>Completed</b>	<b>Time taken</b>	<b>Grade/30.00</b>
Participant 1	1/4/19 14:32	1/4/19 14:41	8 mins 59 secs	15
Participant 2	1/4/19 14:32	1/4/19 14:41	9 mins 40 secs	17
Participant 3	1/4/19 14:32	1/4/19 14:42	10 mins 2 secs	12
Participant 4	1/4/19 14:32	1/4/19 14:41	9 mins 37 secs	13
Participant 5	1/4/19 14:32	1/4/19 14:42	10 mins 1 sec	18
Participant 6	1/4/19 14:32	1/4/19 14:42	10 mins 1 sec	9
Participant 7	1/4/19 14:32	1/4/19 14:45	10 mins 1 sec	13
Participant 8	1/4/19 14:32	1/4/19 14:42	10 mins 2 secs	19
Participant 9	1/4/19 14:32	1/4/19 14:42	10 mins 2 secs	14
Participant 10	1/4/19 14:33	1/4/19 14:42	9 mins 37 secs	15
Participant 11	1/4/19 14:33	1/4/19 14:43	10 mins	15
<b>Overall average</b>				14.54545455

## APPENDIX D: PRE-QUESTIONNAIRE

Rate the following statements about digital technology.

Choose either - 1 Strongly disagree; 2 Disagree; 3 Uncertain; 4 Agree; 5 Strongly agree

デジタル機器について、以下の質問に1～5で答えて下さい。

1. まったく思わない 2. 思わない 3. どちらでもない 4. そう思う 5. とてもそう思う

1. I enjoy using digital devices. (1) (2) (3) (4) (5)

私はデジタル機器を使うのが好きです。(1) (2) (3) (4) (5)

2. I feel comfortable using digital devices. (1) (2) (3) (4) (5)

私はデジタル機器を使うことを心地よく感じています。(1) (2) (3) (4) (5)

3. I am willing to learn more about digital technologies. (1) (2) (3) (4) (5)

私はデジタル技術についてもっと多く学びたいと思います。(1) (2) (3) (4) (5)

4. I feel that I am behind my fellow students in using digital technologies. (1) (2) (3) (4) (5)

私はデジタル技術を使用することでは、周りよりも遅れていると感じます。(1) (2) (3) (4) (5)

5. I think that it is important for me to improve my digital fluency. (1) (2) (3) (4) (5)

自分のデジタル技能を高めることが重要であると思います。(1) (2) (3) (4) (5)

6. I think that my learning can be enhanced by using digital tools and resources. (1) (2) (3) (4) (5)

デジタル機器や教材を使えば、学習成果をもっと高めることができると思います。(1) (2) (3) (4) (5)

7. I think that training in technology-enhanced language learning should be included in language education programs. (1) (2) (3) (4) (5)

言語教育プログラムには、テクノロジーを駆使した言語学習のトレーニングが含まれるべきだと思います。(1) (2) (3) (4) (5)

Rate your computing skills - 1 Very poor; 2 Poor; 3 Acceptable; 4 Good; 5 Very good

あなたのコンピューター技能を評価してください。1. とても乏しい 2. 乏しい 3. まあまあ 4. 高い 5. とても高い

8. Your own typing skills in Japanese (1) (2) (3) (4) (5)

あなた自身の日本語のタイピング技術 (1) (2) (3) (4) (5)

9. Your own typing skills in English (1) (2) (3) (4) (5)

あなた自身の英語のタイピング技術 (1) (2) (3) (4) (5)

10. Your own web search skills (1) (2) (3) (4) (5)

あなた自身のウェブ検索技術 (1) (2) (3) (4) (5)

11. Your own computer literacy (the ability to use the computer) (1) (2) (3) (4) (5)

あなた自身のコンピューター使用能力 (1) (2) (3) (4) (5)

12. Your own Internet literacy (the ability to use the Internet) (1) (2) (3) (4) (5)

あなた自身のインターネット使用能力 (1) (2) (3) (4) (5)

13. Your own digital literacy (the ability to use digital technologies) (1) (2) (3) (4) (5)

あなた自身のデジタル読み書き（理解）能力 (1) (2) (3) (4) (5)

Answer the following questions about online communication.

14. Do you feel comfortable using online communication technology?

(1) Yes, very (2) Yes, somewhat (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_

オンライン通信技術を用いることを心地よいと感じますか。

(1) はい、とても (2) はい (3) 分からない (4) あまり (5) ぜんぜん  
理由を書いてください

15. Do you enjoy text chatting?

(1) Yes, a lot (2) Yes, somewhat (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_

チャットを楽しんでいますか。

(1) はい、とても (2) はい (3) 分からない (4) あまり (5) ぜんぜん  
理由を書いてください



16. How often do you text chat?

- (1) Every day (2) Every week (3) Every month (4) Less than once a month (5) Never

どれくらいチャットをしますか。

- (1)日に1～数回程度 (2)週に1～数回程度 (3)月に1～数回程度 (4)数ヶ月に1回程度

17. Do you enjoy talking online (using apps like FaceTime or Skype to speak with someone)?

- (1) Yes, a lot (2) Yes, somewhat (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_

オンライン電話で話す（スカイプやフェスタタイムなどのアプリを使う）のが好きですか。

- (1) はい、とても (2) はい (3) 分からない (4) あまり (5) ぜんぜん理由を書いてください
- 

18. How often do you talk online?

- (1) Every day (2) Every week (3) Every month (4) Less than once a month (5) Never

どのくらいオンライン電話で話しますか。

- (1)日に1～数回程度 (2)週に1～数回程度 (3)月に1～数回程度 (4)数ヶ月に1回程度

19. Do you feel communicating online is the same as speaking face to face?

- (1) Yes, it is the same. (2) Yes, it is similar. (3) I am not sure. (4) No, it is somewhat different. (5) No, it is very different.

Give reason \_\_\_\_\_

オンラインで通信することは向かい合って話すことと同じであると感じますか。

- (1) 同じ (2) 似ている (3) 分からない (4) ちょっと違う (5) とても違う理由を書いてください
- 

20. Do you think it would be good to use online communication tools to practice English in the classroom?

- (1) Yes, it would be very good. (2) Yes, it would be okay. (3) I am not sure. (4) No, not really. (5) No, not at all.

Give reason \_\_\_\_\_

教室で英語を練習するためにオンライン通信ツールを使うことは良いと思いますか。

(1) とても良い (2) 良い (3) 分からない (4) あまり良くない (5) まったく良くない  
理由を書いてください

---

21. Would you feel positive about using text chat to practice English sometimes in the classroom?

(1) Yes, very positive (2) Yes, somewhat positive (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_

英語を練習するために、時々教室でチャットを使うことは良いと思いますか。

(1) とても良い (2) 良い (3) 分からない (4) あまり良くない (5) まったく良くない

理由を書いてください

---

22. Would you feel positive about using voice chat to practice English sometimes in the classroom?

(1) Yes, very positive (2) Yes, somewhat positive (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_

英語を練習するために、時々教室でオンライン電話を使うことは良いと思いますか。

(1) とても良い (2) 良い (3) 分からない (4) あまり良くない (5) まったく良くない

理由を書いてください

---

23. Which communication mode would you like to use the most to study English in a classroom setting: Face to face, text chat, or voice chat? Rank them from 1 (most) to 3 (least).

Face to face ( ) Text chat ( ) Voice chat ( )

Give reason \_\_\_\_\_

教室で英語を勉強するために、差し向かいで、テキスト・チャット、またはオンライン電話、のどの通信モードを最も使用したいですか。1 (一番使いたい) から 3 (使いたくない) まで順番を書いてください。

差し向かいで ( ) 、テキスト・チャット ( ) 、オンライン電話 ( )

理由を書いてください

---

## APPENDIX E: POST-QUESTIONNAIRES

### Post Questionnaire for Text Chat and Voice Chat Groups

1. Did you enjoy using text chat/ voice chat to communicate in English with other students in the classroom? (1) Yes, a lot (2) Yes, somewhat (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_  
教室で他の学生と英会話するためにチャット/オンライン電話を使って楽しみましたか (1) はい、とても (2) はい (3) 分からない (4) あまり (5) ぜんぜん  
理由を書いてください

---

2. Did you feel comfortable using text chat/ voice chat to speak English with other students in the classroom? (1) Yes, very (2) Yes, somewhat (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_  
教室で他の学生と英会話するためにチャット/オンライン電話を使って、快適だと感じましたか。(1) はい、とても (2) はい (3) 分からない (4) あまり (5) ぜんぜん  
理由を書いてください

---

3. Did you find communicating on text chat/ voice chat the same as speaking English face to face with other students in the classroom?  
(1) Yes, it was very different. (2) Yes, it was different. (3) I am not sure. (4) No, it was somewhat similar. (5) No, it was the same.

Give reason \_\_\_\_\_  
チャット/オンライン電話で通信することは向かい合って話すことと同じだと感じましたか。(1) とても違った (2) ちょっと違った (3) 分からない (4) ちょっと似ていた (5) 同じだった  
理由を書いてください

---

4. Of the three tasks you did, which one did you enjoy doing the most on text chat/ voice chat? (1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

Give reason \_\_\_\_\_  
あなたが行った3つのタスクの中で、チャット/オンライン電話で最も楽しめたものはどれでしたか。  
(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

理由を書いてください

---

5. Of the three tasks you did, which one did you dislike doing the most on text chat/ voice chat? (1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、チャット/オンライン電話で最も嫌いなものはどれでしたか。(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates  
理由を書いてください

---

6. Of the three tasks you did, which one did you find was the easiest on text chat/ voice chat?

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、チャット/オンライン電話で最も簡単なものはどれでしたか。(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates  
理由を書いてください

---

7. Of the three tasks you did, which one did you find was the most difficult on text chat/ voice chat?

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、チャット/オンライン電話で最も難しいものはどれでしたか。

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

理由を書いてください

---

8. Of the three tasks you did, which one(s) do you think would be better to do on text chat/ voice chat instead of face to face in the classroom? (1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates (4) Dictogloss: paraphrasing and Opinion exchange task: leadership qualities (5) Opinion exchange task: leadership qualities and Problem solving task: Working out times and dates (6) Problem solving task: Working out times and dates and Dictogloss: paraphrasing (7) all of them (8) none of them

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、教室で向かい合って話すよりチャット/オンライン電話でやった方が良いと思ったものはどれですか。

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3)

Problem solving task: working out times and dates (4) Dictogloss: paraphrasing and Opinion exchange task: leadership qualities (5) Opinion exchange task: leadership qualities and Problem solving task: Working out times and dates (6) Problem solving task: Working out times and dates and Dictogloss: paraphrasing (7) すべて (8) なし  
理由を書いてください

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9. Of the three tasks you did, which one(s) do you think would be better to do face to face in the classroom?

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates (4) Dictogloss: paraphrasing and Opinion exchange task: leadership qualities (5) Opinion exchange task: leadership qualities and Problem solving task: Working out times and dates (6) Problem solving task: Working out times and dates and Dictogloss: paraphrasing (7) all of them (8) none of them

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、教室で向かい合ってやった方が良いと思うものはどれですか。

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates (4) Dictogloss: paraphrasing and Opinion exchange task: leadership qualities (5) Opinion exchange task: leadership qualities and Problem solving task: Working out times and dates (6) Problem solving task: Working out times and dates and Dictogloss: paraphrasing (7) all of them (8) none of them (7) すべて (8) なし  
理由を書いてください

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10. Would you feel positive about using text chat/ voice chat to communicate in English sometimes in the classroom?

(1) Yes, very positive (2) Yes, somewhat positive (3) I am not sure (4) No, not really (5) No, not at all

Give reason \_\_\_\_\_

教室で英語を練習するために、時々チャット/オンライン電話を使うことは良いと思いますか。

(1)とてもそう思う (2)時には良いと思う (3)分からない (4)あまり思わない (5)ぜんぜん思わない  
理由を書いてください

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11. Which communication mode would you like to use the most to study English in a classroom setting: Face to face or text chat/ voice chat?

(1) Face to face (2) Text chat/ Voice chat

Give reason \_\_\_\_\_

教室で英語を勉強するなら、差し向かいまたはチャット／オンライン電話のどちらをより使いたいですか。

理由を書いてください

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### Post Questionnaire for Face-to-Face Groups

1. Of the three tasks you did, which one did you enjoy doing the most?

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、最も楽しめたものはどれでしたか。

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

理由を書いてください

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2. Of the three tasks you did, which one did you dislike doing the most?

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、最も嫌いなものはどれでしたか。

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

理由を書いてください

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3. Of the three tasks you did, which one did you find was the easiest?

(1) Summarizing task (2) Opinion task (3) Problem solving task

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、最も簡単なものはどれでしたか。

(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3) Problem solving task: working out times and dates

理由を書いてください

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4. Of the three tasks you did, which one did you find was the most difficult?  
(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3)  
Problem solving task: working out times and dates

Give reason \_\_\_\_\_

あなたが行った3つのタスクの中で、最も難しいものはどれでしたか。  
(1) Dictogloss: paraphrasing (2) Opinion exchange task: leadership qualities (3)  
Problem solving task: working out times and dates  
理由を書いてください

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## **APPENDIX F: PRELIMINARY INTERVIEW QUESTIONS**

1. Do you generally enjoy doing English communication activities in class? Why or why not?
  2. How does using text chat/ voice chat to carry out such activities in the classroom compare to face-to-face communication? Were there any merits or demerits?
  3. How would you rank the level of difficulty of the three tasks? Why?  
\* Show the task worksheets to the interviewee to refresh their memory
  4. Did you feel doing any of the three tasks on text chat/ voice chat made it easier or more difficult than doing them face-to-face?
  5. Would you have preferred to do any of the tasks face-to-face instead?
  6. How did you feel you went in the post-tests?
  7. Which set of lexical items from the tasks do you think was easiest to learn?  
\* Show the participants their results. Ask them what they think.
- Ask personalized questions to each interviewee based on their comments given in the post-questionnaire or interview.



## APPENDIX G: PAIR-WORK ACTIVITIES

### Checking Information: So you (mean)...?

Fill in the sentences below. With a partner, read your sentences to each other and explain your reasons. Practice checking your partner's information using the question form – So you (mean)...?

1. I really feel \_\_\_\_\_ about coming back to school.
2. Overall, I would give my holiday a \_\_\_\_\_ / out of 10.
3. I was glad I got to \_\_\_\_\_ over the break.
4. Something I didn't like about the holiday was \_\_\_\_\_.

### Information gap task

**38 Half a crossword: adjectives** Student A

This crossword is only half completed. Your partner also has a crossword which is only half completed. Take it in turns to ask each other what the missing words are, e.g. *What's 1 down?*, *What's 8 across?* and answer by trying to explain each word. All the words are adjectives.

Before you start, look at the words already in your crossword and think of ways of explaining them.

being	low
cheap	only
fat	pretty
funny	soft
happy	stole
hard	wrong
heavy	young
interesting	

If you guess a word correctly but are not sure how to spell it, you can ask your partner to spell it for you.

When you have finished, compare your crosswords.

Photo Credits

**38 Half a crossword: adjectives** Student B

This crossword is only half completed. Your partner also has a crossword which is only half completed. Take it in turns to ask each other what the missing words are, e.g. *What's 8 down?*, *What's 1 across?* and answer by trying to explain each word. All the words are adjectives.

Before you start, look at the words already in your crossword and think of ways of explaining them.

angry	near
big	quiet
bitter	right
dark	safe
difficult	soft
easy	stole
high	only
fat	

If you guess a word correctly but are not sure how to spell it, you can ask your partner to spell it for you.

When you have finished, compare your crosswords.

Photo Credits

## APPENDIX H: OPINION EXCHANGE TASK

**Aim:** Deciding What Makes a Good Leader

### Warm up discussion:

Would you like to be the boss of a company?

Do you think you could be a good leader?

What type of personality should a leader have? Why?

### Match the vocabulary with the correct meanings.

Approachable	率直な
Candid	刺激を与える
Charismatic	謙遜な
Inspiring	近づきやすい
Humble	カリスマ的な
Passionate	情熱的な
Innovative	支える力になる
Knowledgeable	目標を見定めた
Supportive	知識のある
Goal oriented	革新的な

Separate the words above into two groups. Choose your top five (most important) and bottom five (least important) leadership qualities. In pairs, explain why you think so.

My list of the top 5 leadership qualities				
1. _____	2. _____	3. _____	4. _____	5. _____
My list of the bottom 5 leadership qualities				
1. _____	2. _____	3. _____	4. _____	5. _____

With your partner, list leadership qualities you think the next Prime Minister of Japan should have. Using the words above, make a new list from 1 (most important) to 10 (least important).

Group list of leadership qualities				
1. _____	2. _____	3. _____	4. _____	5. _____
6. _____	7. _____	8. _____	9. _____	10. _____

## APPENDIX I: DICTOGLOSS TASK

**Aim:** Paraphrasing Information

**Warm up discussion:**

When was the best time in your life?  
Are you happy with your age now? Why?  
What do you think about getting older?  
Do you feel like an adult yet?

### Japan lowers age of adulthood to 18

The following words are from the news story. Listen to the news story once and mark down the order in which you hear the words.

Apply	申し込む
Recognized	認識する
Pension	年金
Taxes	税金
Adulthood	成人期
Healthcare	健康保険
Officially	公式に
Legal	法定の／合法の
Consent	同意する
Gender	性別

Listen to the news story twice more and take notes. Compare your notes with a partner.

**Memo box**

With your partner, paraphrase the news story. You can use the words list above.

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Read your summary to another member of the class.

**Final discussion:**

Would you like to see the law change? Why or why not?  
Do you think the legal age for drinking and smoking should change too?

## News Story Script

Japan has lowered the age of **adulthood** for the first time since 1876. From 2022, teenagers will become adults at 18 - two years earlier than the current age. There are still things that will not change. The **legal** age for drinking alcohol, smoking and gambling will stay at 20. From 2022, 18-year-olds can marry without parental **consent**. They can also **apply** for loans. Transgender people over 18 will be able to apply to have their **gender officially recognized**.

The new law should help Japan's economy. More people will get married and start families. This will help the falling birth rate and ageing population. More financial freedom could provide more **taxes** to help the government pay for **pensions** and **healthcare**. Many of Japan's young people are more worried about how the traditional Coming of Age Day will change. This is a national holiday in which 20-year-olds wear traditional kimonos to celebrate adulthood.

## APPENDIX J: PROBLEM SOLVING TASK

**Aim:** Working out times and dates

### Warm up chat:

1. At school, what activities are more important? Rank the following:  
Study / Club Activities / Part-time job / Time with friends / Time with family / Time by yourself
2. Are you good at organizing your time? Why or why not?
3. Do you often cram for tests or assignments?

**These phrasal verbs are from the story. With a partner try to think about where they go.**

Hold off	延期する
Find out	見つけ出す
Figure out	(答えなどを) 見つける
Head up	~の方へ向かう
Turn up	現れる
Figure on	想定する
Knuckle down	真剣にとりかかる
Sort out	整理する
Hang out	つるむ
Go ahead	先にどうぞ

**Write the numbers on the calendar below to answer the following questions:**

- When did Jim miss football practice? (1)
- When was Jim's teacher sick and could not go to class? (2)
- When is Jim going to do his French presentation? (3)
- When is Tony and Jim's next football game? (4)
- When is Tony and Chris go bowling? (5)

**Two university friends are chatting about recent events.**

**Tony:** Hi Jim, how are you mate? I didn't see you at football practice yesterday afternoon. What happened?

**Jim:** Yeah sorry Tony, I was really busy and couldn't go. Was the coach mad?

**Tony:** No, just a little surprised. We always \_\_\_\_\_ you being the first person to \_\_\_\_\_. You never miss practice!

**Jim:** Yeah, I know. I feel bad about it. I had a French presentation I had to give this morning in class. I just wasn't prepared. I had to \_\_\_\_\_ last night to get it \_\_\_\_\_.

**Tony:** How did it go?

**Jim:** Well, I was all ready to go this morning. But then I get to class and \_\_\_\_\_ the teacher is sick. So now I have to \_\_\_\_\_ doing it until next class. Can you believe that?

**Tony:** Haha, sorry to hear that. Well, at least you have a bit more time to practice your presentation now.

**Jim:** Yeah, I guess.

**Tony:** Oh, that reminds me, have you \_\_\_\_\_ yet how you are going to get to our next football match? We are playing in Shinshiro. It is quite a long way to go!

**Jim:** Oh yeah, that's right. I completely forgot. When is that going to be again?

**Tony:** 6 days from now.

**Jim:** Oh good. I was worried it may be on the same day as my French presentation. Hmm, I think I will \_\_\_\_\_ the day before by train and sleep over at my grandmother's house. She lives in Shinshiro. That way I won't have to wake up too early. Kick-off is at 9am, right?

**Tony:** That's right. It is an early start.

**Jim:** Do you want to come with me?

**Tony:** Thanks but you \_\_\_\_\_. I already plan to \_\_\_\_\_ with Chris that night. We are going to go bowling.

**Jim:** Alright then. I will see you at the game.

Sunday	Monday	Tuesday	Wednesda y	Thursda y	Friday	Saturda y
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
Morning —	Morning —	Morning —	Morning —	Morning —	Morning —	Morning —
Afternoon —	Afternoon —	<b>Present Time</b>	Afternoon —	Afternoon —	Afternoon —	Afternoon —
Night —	Night —	Night —	Night —	Night —	Night —	Night —
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>

Morning —	Morning —	Morning —	Morning —	Morning —	Morning —	Morning —
Afternoon n —	Afternoon n —	Afternoon n —	Afternoon —	Afternoon n —	Afternoon n —	Afternoon n —
Night —	Night —	Night —	Night —	Night —	Night —	Night —

**Final challenge:**

Using the phrasal verbs above can you come up with three statements about yourself?

Tell your partner and have a short discussion.

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