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Doctoral Dissertation

Dual-role Collaborative Learning Model for Simultaneous Second Language Acquisition and Its Application to Speaking Skill Acquisition

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Abstract

It is becoming increasingly obvious that knowing more than one language is beneficial. Some conventional ways of learning languages have been applied such as attending classes, group discussion and learning, self-study. Apparently, there is not the most appropriate method, people learn in different ways at different paces, and the most effective way may involve not one but a mixture of different techniques. Therefore, people tend to find chance to practice speaking second language with native speakers through informal communication to better improve their speaking skills. However, it is not always easy to get an opportunity of speaking with native speakers face-to-face; using some on-line communication systems is a promised way. The era of globalization opens up solid collaborations between Japan and oversea corporations or entrepreneurs. Japanese people and foreigners visiting Japan should mutually give and take their linguistic knowledge and skills, and we should create opportunities for interactions. However, such bidirectional interactions are seldom carried out; learning (teaching) language is usually carried out in a unidirectional manner so far. In this dissertation, I would like to propose a theoretical model of dual-role collaborative learning to enhance simultaneous acquisition of speaking skill of second language learners. Specifically, learners will play two roles in the conversation: facilitators in their first language and receivers in their second language. This model cannot be easily achieved with normal face-to-face communication. Some supporting features need to be provided followed by a Computer-supported Collaborative Learning (CSCL) we created named Bitak. It is a video chat system to facilitate strict turn-taking dual-lingual communication for language speaking practice. From the experiment result analysis, it was demonstrated that simultaneous acquisition of speaking skill of two different languages can be achieved by employing dual-lingual communication. Furthermore, although it was not

supported by the quantitative analyses results based on the rubric scores, the qualitative results based on the interview and the transcriptions supported that CSCL BiTak is useful to carry out dual-role communication as a method of the second language learning. By using BiTak, all of the subjects gradually had sense of learning, not simply gossiping on the account of the proposed features of BiTak as well as realizing their role of facilitators and receivers; such things have not been observed in the cases of the groups without BiTak. Thus, these results proved that dual-role collaborative learning is effective in simultaneous second language acquisition.

Keywords: Dual-role Collaborative Learning, Simultaneous Second Language Acquisition, Speaking skill, Dual-lingual Communication, Strict Turn-taking

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Chapter 1: Introduction

1.1 Prologue

As we are living in a hyper-connected and fast-paced world, it is becoming increasingly obvious that knowing more than one language is beneficial for many reasons. The demand of choosing a good method of learning second language is also increasing. Apart from many traditional ways, people tend to find chance to practice speaking second language with native speakers through informal communication to better improve their speaking skills. It is the most popular way to learn a language as well as effective way most people use when they live in the country where the language is spoken. However, it is not always easy to get an opportunity of speaking with native speakers face-to-face.

The era of globalization opens up solid collaborations among international corporations or entrepreneurs. As a result, for example in Japan, more and more promising careers involved in foreign language-speaking environment are offered with high competition, which contributes to the current increasing need of learning foreign language. On the other hand, Japan has recently accepted more and more foreigners and they want to master Japanese for their profession, language choice or living in Japan. Hence, there potentially exists mutual benefits for Japanese people and the visiting foreigners: the Japanese people can learn foreign languages from the foreigners, and the foreigners can learn Japanese from the Japanese people. They should mutually give and take their linguistic knowledge and skills, and we should create opportunities for interactions.

However, such bidirectional interactions are seldom carried out; learning (teaching) language is usually carried out in a unidirectional manner. For example, a

foreigner works as a lecturer of a language school and teaches his/her native language to Japanese students. On the other hand, he/she goes to a Japanese school to study Japanese. These activities are carried out separately and unidirectionally. There have no attempts, to the best of my knowledge, to satisfy both requirements simultaneously.

Hence, I have been studying on a method of "simultaneous second language acquisition" for enhancing mutual benefits of inhabitants and foreign visitors by improving efficiency of their second language acquisition. To acquire the second language, we have to master four skills, i.e., speaking, listening, reading and writing. These four separate language skills are also commonly referred as the productive and receptive skills. The receptive skills are listening and reading, because learners do not need to produce language to do these, they receive and understand it. These skills are sometimes known as passive skills. They can be contrasted with the productive or active skills of speaking and writing. Speaking and writing are known as the productive skills as they both require some form of language output, in other words, learners doing these need to produce language. These second language skills are best acquired if speaking skill is considered a major and critical component of the learning process. In other words, it is essential step for learners to be able to get a good grasp of the language to be proficient in both oral and written communication. Learning to speak moves the student on to develop other language skills such as reading, writing and listening. Therefore, my research focuses on simultaneous acquirement of the speaking skill during the conversation between people whose mother tongues are different, such as Japanese speakers and English speakers.

In this dissertation, I would like to propose a theoretical model of dual-role collaborative learning to enhance simultaneous acquisition of speaking ability of second language learners. Specifically, learners will play two roles in the conversation:

facilitators in their first language and receivers in their second language. This model cannot be easily achieved with normal face-to-face communication; some supporting features need to be provided. Therefore, followed by a Computer-supported Collaborative Learning (CSCL), I created Bitak system, which is a video chat system equipped with several functions to facilitate simultaneous acquisition of speaking ability of second language based on the dual-role collaborative learning model.

This introductory chapter proceeds with the background motivation of this study, followed by the major objectives, the significance of the study, and an outline of the organization of the whole dissertation.

1.2 Background

Talking fluently to native speakers is the popular target of many second language learners. Nevertheless, formal language education and existing programs are still inadequate for learning language for daily use. Therefore, people tend to find chance to practice speaking second language with native speakers through informal communication to better improve their speaking skills. It is the most popular way to learn a language as well as effective way most people use when they live in the country where the language is spoken. Your vocabulary, grammar and way of forming sentences, conjugating words might be improved through this kind of learning. In addition, how to sound native and use appropriate slangs are the other advantages it brings about.

Among the global community in which English is increasingly considered the predominant international language, Japan presents a particularly compelling case of learning English. The era of globalization opens up solid collaborations between Japan and oversea corporations or entrepreneurs. As a result, more and more promising

careers involved in English-speaking environment are offered with high competition, which contributes to the current increasing need of learning English in Japan. On the other hand, more and more foreigners study Japanese for their profession, language choice or living in Japan. There are many common reasons to explain the growing motivation to learn Japanese of foreigners. As we already know, Japan is the cradle of manga and anime. Their influence has been world widely spread and inspired people to explore Japanese culture and language. Northwood, B., & Kinoshita Thomson, C. [1] showed that "the predominant reason to continue was the hope to travel to Japan, but an interest in Japanese culture and in Japanese popular culture (J-pop) products (e.g., anime, manga) also was prominent". In addition, the impact of Japan on the global economy is robust and steady as it is one of the biggest economies in the world. Electronic and automotive companies such as Sony, Panasonic, Honda and Toyota are known for their excellent quality and efficiency. Being able to speak Japanese will be a substantial advantage for non-Japanese speakers who want to work for Japanese companies. However, there are lots of difficulties to study languages. For instance, Seward, J. [2] asserts that foreigners have to deal with language frustration when studying Japanese. They are afraid of borrowed words, male and female speech forms, polite and non-polite speech, and anatomical terms, proverbs, dialects, and other aspects of Japanese culture.

On the other hand, although there has been a huge economic and human resources dedicated to studying English in Japan, Japanese still consider themselves as "poor speakers of English". Most of them seldom or never confidently use written or spoken English in real-time communication. The primary reason for this is "the widespread use of traditional grammar-translation method of English language teaching in Japanese schools"[3]. The proportion of students who acquire certain confidence and

necessary skills are surprisingly low despite the fact that English classes are compulsory in Japanese schools. Japanese people admit that the existing teaching style often limits students' ability. They just can gain passively from what little English they hear from the teachers and what words are put in front of them. Effective teaching method should incorporate as many senses as possible to deepen students into English. Besides, Japanese students experience great obstacles in studying English, due to fundamental differences in grammar and syntax, as well as important differences in pronunciation. According to Galloway, N. [4], there are several factors influence Japanese students' attitudes in learning English such as pedagogical beliefs, stereotypes, future goals and motivation.

These language barriers prevent people from communicating directly [5]. Some conventional ways of learning languages have been applied such as attending classes, group discussion and learning, self-study. Apparently, there is not the most appropriate method, people learn in different ways at different paces, and the most effective way may involve not one but a mixture of different techniques. Language learning, much like language itself, might be an inherently social pursuit. Moreover, there have been no methods that satisfy both requirements that meet the demand of both Japanese and internationals. The ordinary methods satisfied only either requirement. Since there are complementary requirements, there should be a method that satisfies both requirements at the same time. Kimber, L. [6] recommends providing more opportunities for *interactions* between Japanese and internationals.

Being inspired by that recommendation, this dissertation suggests a novel method for students to freely practice second languages. The method is "simultaneous second language acquisition" for enhancing mutual benefits of inhabitants and foreign visitors by improving efficiency of their second language acquisition. The term

“simultaneous second language acquisition” is normally used to mean the learning of another language available in the sociolinguistic environment at the same time as the learner acquires the first language or mother tongue [7]. However, this term in this dissertation is used in the context of people of different first languages simultaneously acquiring their second languages during their communication with each other.

1.2.1 Dual-lingual Communication

We propose a concept of Dual-lingual Communication in this research, which is defined as two languages being spoken in the conversation and understood by respective participating parties (Fig.1). Namely, for example, Japanese students will use English while foreign students will speak Japanese though they can switch to his or her mother tongue at any time. This is different from bi-/multilingual communication. Myers-Scotton [8] defines bi-/multilingual as “the ability to use two or more languages to sufficiently carry on a limited casual conversation”.

Figure 1: Dual-ligual communication concept in my study

Using more than one language in a conversation has become ordinary and popular for the sake of deeply understanding interlocutors. In Japan, there is a popular free English and Japanese news podcast called Bilingual News. This program offers

casual and unedited colloquial language learning experience through a weekly review of relevant news topics. Their unique bilingual conversation style allows you to understand what they are talking about even if you understand only one of the languages. In an interview with Tokyo Weekender – Japan's Premiere English Magazine, the host of the program shared their purpose of creating this podcast: "On the surface the podcast is about language study. We take turns summarizing news items we have selected in both English and Japanese. We follow that up by having an authentic conversation about the topic – I will speak in English and Mami will speak in Japanese. We're both bilingual so we can communicate in real time using both languages fairly comfortably. At a deeper level the podcast is about initiating a more open conversation between Japanese people and the rest of the world."

According to Li, N., & Rosson and M. B. [9], when people are aware of cultural differences between them and other interlocutors, it is likely that they may change their communication styles to adapt to the current environment. In other words, they may shift their speech patterns toward other interlocutors so that they are more similar to each other. Giles' communication accommodation theory already asserted this aspect of accommodation behavior in cross-cultural communication – speakers may mimic other speakers' language use, so that their communication styles are similar [10]. These are the reasons why I believe that dual-lingual communication can be applied in second language learning. During the conversation, Japanese and internationals will have chance to speak second language. They will help each others correct speaking mistakes by using their native language (in this case internationals using English). It will be a good opportunity for both parties to learn from each other to make comfortable communication.

1.2.2 Strict Turn-taking

Turn-taking is one of the fundamental mechanisms to promote and maintain talk in conversations. Coulthard [11] defined it as one of the basic facts of conversation: speakers and listeners change their roles in order to begin their speech. They usually take turn naturally and it is rare to realize any conventionalized arrangement of turns in an ordinary conversation. As a result, the current speaker might be overlapped or interrupted by another speaker.

Talking naturally without caring overlapping usually brings about the comfort of expressing ideas in an informal conversation. Smooth turn-taking is an essential aspect to coordinate one's communicative actions and interact successfully with others. However, it is not always good for learning a language. You may hardly recognize your speaking mistakes by yourself although the listeners can understand clearly. Moreover, in a cross-cultural group chat, people communicate at different levels of proficiency then turn-taking may be seriously disrupted which causes confusion and neglection of discussion point. Particularly, people seemed to be more hesitant when taking turns because they were not familiar with the other culture's communication style. As a result, it is harder for them to take turns at the suitable time.

In many researches of second language learning, the fact that turn-taking in communication may affect the quality of group discussion between non-native and native speakers has been taken into consideration. According to Mynard, J. [12], foreign students seemed "to be overwhelmed and even lost in parallel and fast discussion, especially students who have slow keyboarding skills, slow reading/writing skills, or different cultural backgrounds." Hence, I would like to strictly apply the turn-taking approach by using a supporting function that requires people to entirely obey the turn-taking rule. I suppose that the unfamiliar way of strict turn-taking will bring about unexpected but possible outcomes.

1.2.3 Assessment of Second Language Speaking Proficiency

It is possible to categorize language examinations based on their intended purpose. According to Schoonen, R. (2011), test takers' linguistic abilities are inferred by test users in all circumstances [86]. The inferences, on the other hand, are put to various uses. In the research of Davies (1990, p. 20), testing is divided into four categories, namely selection, feedback, evaluation, and experimentation [87]. Bachman & Palmer (1996) [88] refers to the different types of decisions we make based on the inferences about language proficiency, namely selection, placement, diagnosis, and progress and grading at the level of the individual test-taker. Test scores are also used to evaluate therapy and teaching programs and "check scientific theories" in addition to their individual application (Bachman, 1990) [89]. Most colleges and universities need test-takers to satisfy a specific standard or to achieve a certain grade before admitting them. As long as the overall score accurately reflects the desired level of expertise, a single score may be sufficient. According to James E.Purpura [13], the term *Language Assessment* refers not only to formal tests like TOEFL, IELTS or an end-of-chapter evaluation, but also to other methods of obtaining information about knowledge, skills, and ability of students such as observing second language performance during pair work or by asking learners to report their understandings and uncertainties.

In this research, I would like to use Rubric: a scoring guide used to evaluate the quality of students' constructed responses to assess their second language speaking proficiency. The usefulness of Rubric has been recognized in the field of assessment for many decades [14]. In order to give valid, reliable, and consistent assessment findings that demonstrate the learners' speaking achievement/level, speaking assessment is frequently reported as an overall mark on bands scales or score points

(Council of Europe, 2014) [90]. In general, there are two types of assessment measures for speaking skills: holistic and analytic. When utilizing a Rubric, evaluators use an analytic rating system whereby each component is scored individually or performance is rated holistically on the basis of an overall impression [15].

1.3 Objectives of the study

This study intends to accomplish the following objectives:

- Achieve simultaneous second language acquisition by applying Dual-role Collaborative Learning model.
- Verify the validity of the theoretical model by the effectiveness of Dual-lingual Communication supported by the CSCL BiTak system.
- Focus on communicative approach to enhance speaking skill
- Contribute to the Collaborative Learning research as well as deeply exploring multiple language communication.

1.4 Significance of the study

Mastering a second language requires the accomplishment of many skills in which speaking is one of the most difficult skills. Speaking a new language also means being confident and comfortable with being not afraid of making mistakes. Studying cannot replace the practice that real life provides. By creating an online environment using Dual-lingual communication and supporting features for students to openly exchange language skills, the study aims to recommend an effective collaborative learning method to enhance speaking ability of language learners. Besides, This research is expected to provide more implications for facilitators to organize language learning environments or create computer-supported collaborative learning (CSCL)

tools to support second language acquisition. Furthermore, the research is hoped to give language learners more confidence and motivation in studying a second language.

1.5 Organization of the study

This dissertation is organized into seven chapters. Following the research backgrounds and objectives and significance of the study of this introductory chapter, Chapter 2 presents the review of relevant literature and correlates them with my proposed theoretical model and system. Primarily, this chapter is to present the related works of Second Language Acquisition (SLA) research and to examine how Computer Supported Collaborative Learning (CSCL) has been used to support second language learning.

Chapter 3 and 4 present the description of Dual-role Collaborative Learning model and my proposed system called BiTak and explain its prominent features specifically.

Chapter 5 describes the experiments to evaluate the theoretical model and the proposed system as well as mentions their results. The effectiveness of the model is also discussed in this chapter by comparing two experiment approaches, one using BiTak's features and one without using it.

Chapter 6 discusses the validity of Dual-role Collaborative Learning Model and possible domains that this model can be applied

Finally, chapter 7 summarizes the overall findings of this study, and brings the major findings into focus for future research.

Chapter 2: Related works

The purpose of this chapter is to present an overview research of Second Language Acquisition (SLA) and the literature review to examine how Collaborative Learning and Computer Supported Collaborative Learning (CSCL) has been used to support second language learning. From this, we will have an overview about the role of this research. After all, summarization of the gap literature will be discussed.

2.1 Second Language Acquisition Research

The distinction between acquisition and learning was made by Krashen (1982) who noted that acquisition occurs when learners focus on meaning in comprehensible material, whereas learning occurs when learners focus on learning the language (knowledge about language gained through formal instruction or metalinguistic analysis) [91]. Language development does not necessitate significant application of conscious grammatical rules or painstaking drill. Acquisition necessitates meaningful contact in the target language - natural communication - in which speakers are more concerned with the messages they are expressing and understanding than with the structure of their utterances. Research supports the idea that second language (L2) learners can acquire some linguistic features without any effort on their part or teacher interaction.

It's possible for students to give each other feedback and opportunities for interaction, do not necessarily make more errors than they do when communicating with the teacher and can provide answer in the form of clarification inquiries or meaning negotiation (Gass and Varonis, 1994 [92]; Yule and Macdonald, 1990 [93]). Although Oliver (1995) [94] showed that even young toddlers may use interaction to receive appropriate input, the majority of this research has focused on adults. It has

been shown by Kowal and Swain (1994) that adolescents benefit from exercises involving pair work, in which students work together to reconstruct dictated texts [95].

Research has examined the efficiency of "comprehensible input" in learning a language in several studies. Krashen and his colleagues have studied the value of in-depth reading as a means of obtaining information that is easy to comprehend (e.g. Krashen, 1989 [96]; Pilgreen and Krashen, 1993 [97]). The understandable input hypothesis, particularly the corollary of the hypothesis that suggests "reading for pleasure" is the best type of comprehensible information, is supported by these studies. Young second-language learners were read to or read to in the target language as part of a wide range of studies, including Elley's (1991). [98]. More reading activities were associated with higher levels of second language acquisition than audio-lingual instruction, according to the findings. However, students gained much greater benefit when their reading was accompanied by active participation from the instructor (Elley, 1989 [99]; see also Zimmerman,1997) [100].

According to Krashen (1991) [101] the key and necessary factor for language acquisition is ‘comprehensible input.’ As a result, the greatest strategies are those that provide ‘comprehensible input’ in low-anxiety conditions, with messages that children desire to hear. These strategies do not force pupils to produce in the second language until they are ‘ready,’ knowing that improvement comes from providing communicative and intelligible input rather than forcing and correcting creation. Conversations with sympathetic native speakers who are eager to assist the acquirer understand are extremely beneficial in the real world. In this approach, my research would like to focus primarily on those whose already have basic knowledge of a second language. Hence, it would be a lot easier for students to exchange their languages in simple and convinient instructions.

2.2 Collaborative Learning

Collaborative learning describes a variety of educational practices in which interactions among peers constitute the most important factor in learning, although without excluding other factors such as the learning material and interactions with teachers. Collaborative Learning (CL) is defined as a situation in which two or more people learn or attempt to learn something together [16]. More specifically, Mitnik, R. et al [17] claimed that CL is based on the model that knowledge can be created in a population where members actively interact by sharing experiences and take on asymmetry roles. Knowledge management is a dynamic and continuous social process that entails the acquisition, organization, storage and retrieval of knowledge resources, as well as its transmission to user groups with relevant feedback in order to fulfill corporate goals (Ho, T. V. et al., 2015) [102], (Islam, S. et al.,2012) [103]. CL involves the mutual engagement of all participants in a coordinated effort to solve the problem together [18], which can be inferred everyone may get the same output experience. This learning approach has brought about many positive results. When students are working in a group, they will be received benefit from each other in both academic and social support [19]. They will not feel alone or isolated from the rest, which is an important factor to promote an active and responsible role of each student. In CL, students are encouraged or required to work together on learning tasks. It is necessary to differentiate CL from some traditional 'direct transfer' models. While the instructor is assumed to be the distributor of knowledge and skills in the teacher-centered models, CL focuses on a learner-centered model that treats the learner as an active participant. The conversation, multiple perspectives, and argument that arise in cooperative groups

may explain why collaborative groups facilitate greater cognitive development than the same individuals achieve when working alone [20].

Collaborative learning is used across all age levels of formal schooling, from children doing handicrafts together to teams of university students carrying out a project. In lifelong education, collaborative learning is a key paradigm in informal learning (e.g. sharing knowledge among communities of practices) but has been somewhat underutilized in corporate training.

Collaborative learning has already been widely applied in many language learning classrooms. The learning process is enhanced thanks to group interaction when they negotiate and share meaning socially [21]. In addition, increasing interaction between students from different languages is also highly recommended. Kimber, L. [22] suggests providing more opportunities for interactions between Japanese and internationals to help each other speak. This method may satisfy both of their requirements at the same time.

Recent researches claims that small-group interactions in the classroom for language acquisition proves that collaborative work will reduce dependence on teachers and stimulate the learners' ability to participate actively in conversations [23]. Enhancing students' communicative ability is always necessary to help them effectively engage in any language situation. Collaborative Learning offers natural, interactive contexts where students listen to each other, ask questions and clarify issues. According to a survey of research on pair/group work conducted by Long and Porter (1985), learners produce more longer sentence and do not speak any less grammatically in group work than they do in teacher-front lessons [24].

2.3 Computer Supported Collaborative Learning (CSCL)

Since Collaborative Learning theory has been well applied in standard, classroom-based groups, it opens up expectation of how well the benefits of CL will bring to the electronic environment [25]. With the advance of current technology, Computer-supported Collaborative Learning (CSCL) has become one of the popular applications of the CL approach to shift from the traditional face-to-face group work [26].

Koschmann (1996) recognized computer-supported collaborative learning (CSCL) as an emerging paradigm of educational technology [27]. Throughout history, our conceptions about human cognition and learning have been related and shaped by the development of technology [28]. This parallelism between our psychological understanding and the technologies available is clear in the field of computer-supported collaborative learning, where technology meets psychology, philosophy and pedagogy. Instructional designers and software developers, educational psychologists, learning theorists, computer scientists, and even sociologists are interested in this rather new area of research. It is hard to say when CSCL emerged as a separate field of study, or as an emerging paradigm of educational technology. The first CSCL workshop took place in 1990 [29], and the first international CSCL conference was held 1995 in Bloomington, Indiana. However, O'Malley and Scanlon already used the term computer-supported collaborative learning in 1989 [30].

How should one define computer-supported collaborative learning? Put briefly, CSCL is focused on how collaborative learning supported by technology can enhance peer interaction and work in groups, and how collaboration and technology facilitate sharing and distributing of knowledge and expertise among community members.

The connection of CL and CMC (computer-mediated communication) technology has been proved to be mutually beneficial by several researchers. CL helps structure the on-line environment while CMC technology removes many barriers of CL [31]. Hence, CSCL is about how technology can be used to support CL [32]. Literally, it is a pedagogical approach where in learning takes place via social interaction using a computer or through the Internet. The sharing and construction of knowledge among participants using technology as their primary means of communication or as a common source characterize this kind of learning.

2.4 Computer Supported Collaborative Learning in Second Language Acquisition

Recent studies have suggested some implications for the design of tools that might enhance cross-cultural group chat (Li, N., & Rosson, M. B., 2012)[33]. They recommended computer–mediated communication (CMC) tools as an important role in both work and educational multilingual contexts. Specifically, CMC tools design such as Instant Annotation (IA) for tagging or side-chatting or Thread Chat which helps people organize their chat logs into thread may allow global organizations to help non-native speakers be more comfortable and more effective members (Li, N., & Rosson, M. B. (2014, April))[34]. The research result has shown that adding instant annotations during real-time collaboration is both possible and has promising consequences for chat participants. In terms of cost, participants seemed able to multitask well between the main chatting window and the IA side bar. (See Fig.2)

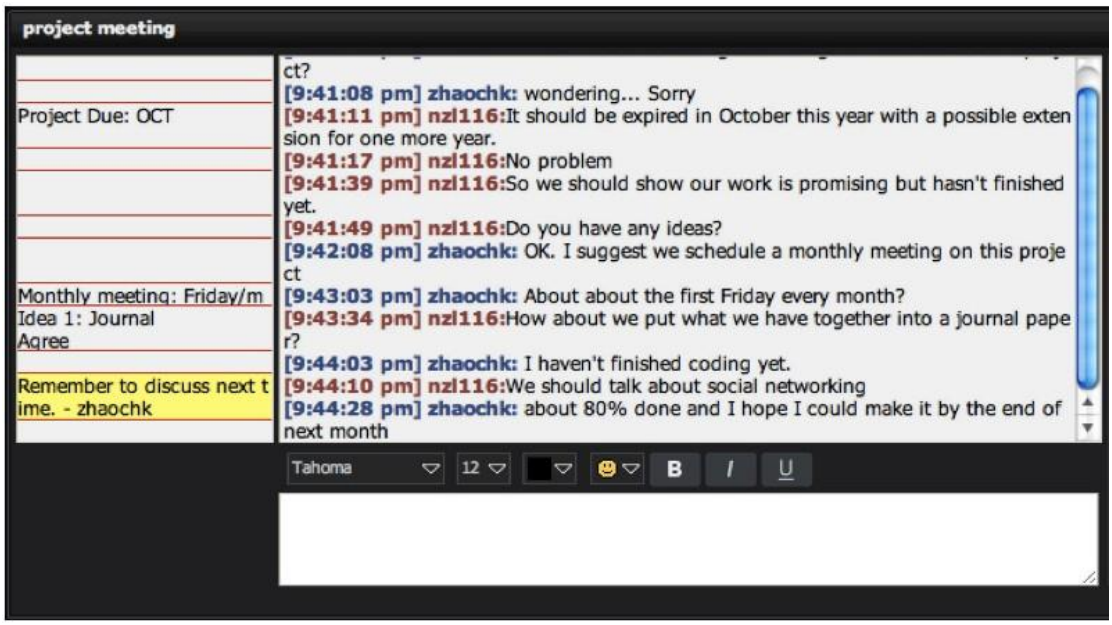

Figure 2: Example of Instant Annotation

Recent researches have showed that computer-mediated communication tools are considered as potential source for students to enhance their language proficiency. Freiermuth, M., & Jarrell, D. (2006) in their research of second language learning asserted that when compared with face-to-face communication, online chatting provided a more comfortable environment for foreign students to make conversations [35]. In spite of facing the pressure of immediacy that is typically expected by speakers in face-to-face communication, students found it less burden when communicating or discussing through text chat. Online chatting has proved to be a promising tool to motivate students' interaction in the target language.

Besides, research in computer-mediated communication has also inferred that a student's willingness to communicate may be positively affected by computer. Specifically, Freiermuth (1998, 2001b) claimed that when assigned a group task or presentation, group language learners seemed more eager to communicate using computer-mediated communication tool than using spoken language [36]. They felt more freedom in expressing their ideas without being hindered from the teacher or other

students or a plethora of other elements that might minimize the effect of the experience (Schwienhorst 2002) [37]. After making interviews about preference of media use of non-native speakers, Setlock, L. D., & Fussell, S. R. [38] also showed that non-native speakers preferred online chatting tools because these tools reduced the risk of misunderstandings that often caused by language problems.

The potential of computer-mediated communication tools in facilitating second language acquisition has been mentioned in various current researches. Angelova, M., & Zhao, Y. [39] conducted a collaborative online project between students from China and United States of America. They were paired up to communicate using the discussion board and e-mail tools for tutoring and learning different aspects of English grammar and developing culture awareness. The American students tried to corrects mistakes of their Chinese partners in writing introduction essays or cultural lessons. The Chinese students used e-mail as well as Skype to communicate with their American partners. Apart from the benefits collected from different aspects, the study concluded that computer-mediated communication are used as a bridge to connect students from two different countries and two different programs to improve the teaching skills of the American as well as to enhance non-native speakers' language skills. Another research proposed a mobile system called Xpress to support second language learners gain colloquial expressions by crowdsourcing native speakers [40]. The results of the study indicated firmly Xpress' potential in helping SL learners effectively learn colloquial expressions by their design ideas (See Fig.4).

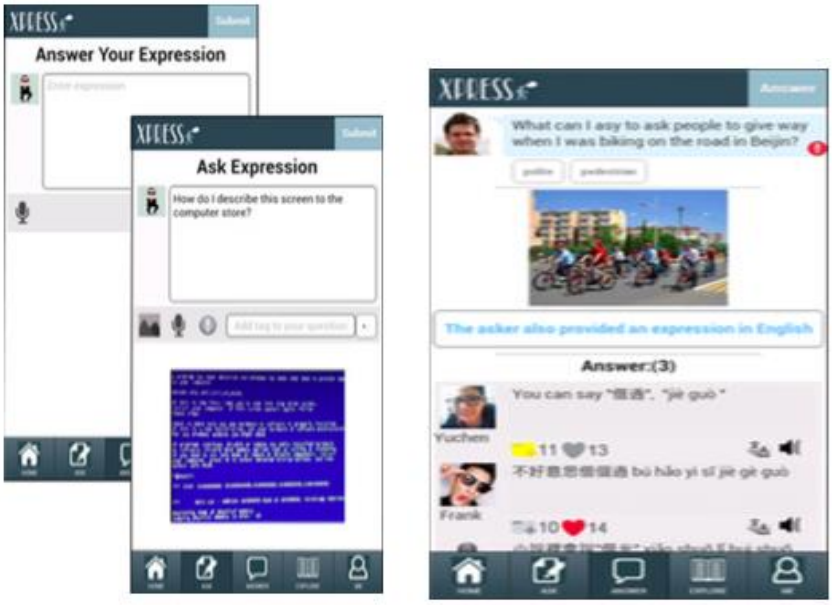

Figure 3: The design of Xpress

In addition, videoconferencing that has been called visual collaboration is becoming noticeable in the benefits of online language learning. Hampel, R., & Stickler, U. (2012) conducted research about videoconferencing in supporting multimodal interaction in an online language classroom [41]. The study concentrated on the use of videoconferencing in the context of a larger exploratory study to find out how language learning interaction was influenced by the virtual learning environment. The findings demonstrated how an online videoconferencing environment can be applied in language teaching as well as how teachers and learners collaborate in online environment.

Moreover, a significant amount of literature explored the potentials of computer technology with regards to teaching and learning languages more effectively. Dunkel (1990), for example, asserted that the possibilities of computer technology as a tool could include increasing language learners' self esteem, vocational preparedness, language proficiency and overall academic skills [42]. Furthermore, the benefits of multimedia, the Internet, and various forms of distance education were explored by

many others [43][44][45][46]. Educators were particularly interested in technology's interactive capabilities, such as providing immediate feedback and increasing learner autonomy, in addition to the capability of simulating real-world situations via audio, video, and graphics [47][48][49][50]. Moreover, discussions of the benefits of computer technology included the exploration of the application of certain technologies in specific language areas. Liu (1994) [51] introduced hypermedia technology with its linking and interactive capabilities which was discussed as a tool to enhance vocabulary learning, and reading comprehension [52]. Chun and Plass (1997) considered the potentials of using video and audio to support text comprehension [53]. Kramsch and Andersen (1999) argued that multimedia technology could provide authentic cultural contexts that are important for language learning [54]. Others advocated CALL programs, especially voice-interactive CALL for improving learners' speaking skills [55]. Computer technology in combination with a conferencing system was considered an effective means of providing goal-directed writing courses tailored to different learning styles [56]. In addition, Cononelos and Oliva (1993) reported employing usenet and email to connect students in an Italian class with native speakers in order to facilitate discussions on cultural issues [57]. Others shared their personal experiences in using electronic dictionaries for reading and writing [58], and *Web Course in a Box* software to teach German [59].

The pedagogical benefits of computer mediated communication (CMC) as facilitated through email and programs like *Daedalus* Integrated Writing Environment (DIWE), became one of the most commonly discussed topics in foreign language literature [35]. Some language educators implemented this new medium in the classroom and reported on its linguistic and psychological benefits [60][61][62][63][64][65][66][67][68][69][70]. Unlike many individual CALL

applications, CMC seems to promote meaningful human interaction that can foster the language learning process. That is, advocates claim that CMC can be an excellent medium for cultivating new social relations within or across classrooms, resulting in collaborative, meaningful, and cross-cultural human interactions among members of a discourse community created in cyberspace [71][72][73][74].

As a matter of fact, the application of technology in language classrooms included the use of film, radio, television, language labs with audio/video tapes, computers, and interactive video became popular [75]. Various types of computer-assisted language learning (CALL) also began to become more commonplace [76]. Although there were some innovative uses of software such as *MacLang,* the majority of CALL uses were limited, in form, to drill and practice exercises. As the technology advanced, we began to see more interactive uses of CALL as well as an increase in the integration of various media into the computer system [77]. Computer technology became more accessible to both individuals and schools. Moreover, our growing understanding of its potentials has encouraged a shift in emphasis from computer technology itself to its applications. That is, finding ways to use computers for enhancing teaching and learning has gained prominence in the research. Nowadays, the use of multimedia, the Internet (especially the World Wide Web), and various forms of distance learning are wide spread. Interest in using them as tools to support language learning is growing, both from the perspective of a language educator and that of a language learner.

CSCL has been considered as potential source for students to enhance their language proficiency. In language learning, current studies in the computer-assisted language learning (CALL) field suggest that the computer provides material and feedback for learners to practice the target language in and outside the classroom and

has been seen as a positive tool for language learners in their individual study. CSCL in Language Learning offer the potential for interaction between the computer and the language learner which refers to the learner's responding questions and receiving correct answers. Hence, the computer is also seen as a potential language tutor by providing assessment for students' responses [78]. In addition, students' autonomous language learning and self-assessment can be widely available through the web rather than being tied to a particular class [79].

Besides, because of the spread of COVID-19, face-to-face schooling was actively interrupted. This resulted in a significant shift to the online learning model, as students and teachers remained at home for their own protection (Rugube et al., 2020; Brief, P., 2020)[104][105]. Using digital tools to enhance group communication and collaboration has been shown to increase student involvement in group activities. For example, synchronous online collaborative writing may boost student involvement in text-editing activities, leading to superior academic performance than face-to-face learning (Han & Li, 2019)[106]. Using a text-messaging tool like Slack may help students support each other. (Tuhkala & Kärkkäinen, 2018; Zhang et al, 2019)[107][108].

2.5 Remained problems and positioning of my study

Although there are many advantages in CL and CSCL, there still remains several problems. There are certain drawbacks to using CMC technology for collaborative language learning. First, a technology glitch may impede learning. According to Olaniran (2006)[109], a lack of knowledge about a communication technology might generate anxiety in students before they become comfortable with it. In this vein, Olaniran (2004)[110] believes that CMC instructors must be adaptive to

deal with unexpected events that may arise throughout a CMC course. In addition, learner access, institutional security, and timetabling constraints might all be problematic (I Solé, C. R., & Hopkins, 2007)[111]. The materials utilized may also make it difficult to meet the needs of particular students. Choosing and adapting materials in a CMC situation might be tough. It requires more time and effort than a face-to-face session since teachers must create more detailed criteria for their students. The quantity and quality of materials may also be affected by computer technology.

Thorton (1999) asserts that not all students may take equal part in collaborative activities [80]. Some passive students may feel hard to raise their voice or ones who more active will dominate the conversation. Besides, few studies have aimed to utilize CSCL for supporting simultaneous learning of multiple languages. Being inspired by those findings of the preceding studies, we propose a theoretical model of dual-role collaborative learning to enhance simultaneous second language acquisition.

In addition, few studies have aimed to utilize video chat applications for supporting simultaneous learning of multiple languages. My study proposes a video chat system as a virtual turn-taking face-to-face environment for users to practice dual-lingual conversation. Instead of choosing one partner's language over the other, they practice "dual-lingual" pattern. It is a communication pattern in which each partner actively uses his or her second language and receives the partner's second language in response. This video chat system will support group turn-taking conversations speaking Japanese and English in which their voices and images will be intentionally recorded so that they can re-listen to utterances again at anytime.

Chapter 3: Dual-role Collaborative Learning Model

In order to achieve simultaneous "give and take" of the linguistic knowledge and skills, people whose first languages are different can play equal roles in simultaneous practicing second languages. Therefore, I propose a novel model of collaborative learning that is called "dual-role collaborative learning" (see Fig.4). In this model, students are required to take two roles when practicing second language: facilitator in their first language (L1) and receiver in their second language (L2). The key point of this model is that each student has to play these two roles *simultaneously*. Namely, for instance, Student A whose L1 is Japanese will play a role of facilitator in Japanese as well as a role of receiver in English, while Student B whose L1 is English will play a role of facilitator in English as well as a role of receiver in Japanese, in an identical collaborative learning activity.

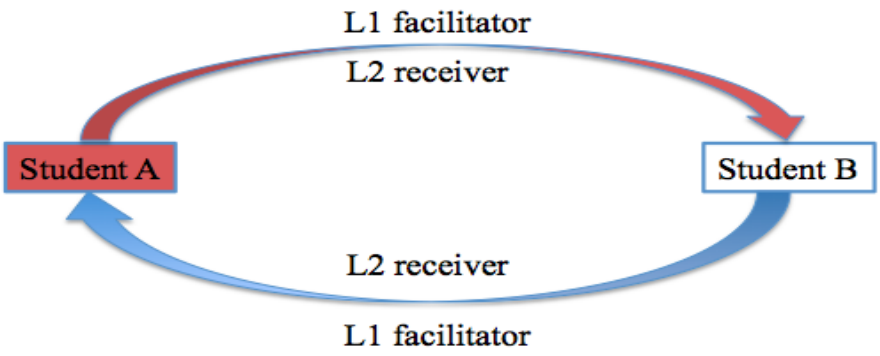

Figure 4: Dual-role Collaborative Learning Model

To put this model in practice, two languages have to be concurrently used in an identical conversation and understood by respective participating parties instead of choosing one partner's language over the other, which is called "dual-lingual communication".

Simply speaking, the model is working on the collaboration in which every student becomes both teacher and learner at the same time.

Learning by teaching is a teaching and learning approach established in German schools in the 1980s by French language instructor Jean-Pol Martin (Martin, 1985) [112]. Students take on the role of teacher in this method, which promotes their learning by motivating them to educate other students and collaborate with their peers. Since 1985, the "learning by teaching" method has been around. From its beginnings as a tool solely for foreign language teachers, the program has grown to encompass a wide range of educational settings and disciplines, from elementary school through college and beyond (Grzega, 2011)[113]. Unlike teacher-centered methods, this technique seems to connect students more effectively (Martin, 2018)[114]. Students collaborate in pairs, create posters, and educate through pantomimes and role-plays. Your presentation confidence develops with each presentation. Classes are kept grade-free to keep pupils calm. The evaluations are divided into phases. Because the difficult work draws the couples together, and successful material mediations are praised vigorously by their peers and the teacher, the social requirements are better met. Self-realization is thus made easier because each student can deliver the information using their own skills, such as musical or graphic skills. Overall, all teaching activities seem to be embedded in a demanding framework.

In cooperative learning methods in class, there is one popular technique that also requires students to be both learners and teachers: Jigsaw technique. This technique was invented by a social psychologist Elliot Aronson in 1971. It has been seen as the most flexible and widely-used teaching method compared with the other cooperative learning strategies [81,82]. This technique includes the following steps: 1) the students will be divided into groups; 2) group leaders will be assigned needed to provide

guidance and follow up on the given tasks; 3) lessons will be divided into segments; 4) each student will be given a specific segment to work on; 5) “expert groups” will be joined together in order to discuss and comprehend the given segments; 6) students will be brought back into their original “jigsaw groups”; 7) each student will be asked to explain their segment to their group; 8) the instructor floats from one group to the other to facilitate and observe the learning process; and 9) the instructor will assess the students using various assessment tools. According to Gocer [83], each student becomes both a learner and a teacher as well. The class teacher is not the sole provider of knowledge due to the fact that the students themselves do most of the work. It is beneficial to apply Jigsaw technique in teaching because it motivates the interaction with peers, help to build interpersonal and interactive skills among students. Nevertheless, the common problem of this technique is about the slow students in the group. It is important that each member needs to present the best possible report to the group. However, students with poor study skills may present inferior reports to their jigsaw group. Meanwhile, in my model of Dual-role Collaborative Learning, all students have expertise of their first language. In other words, they are supposed to be competent in the role of facilitators.

My approach is supposed to have contribution in real education that language can be learnt by exchanging and teaching. In this rapid globalization, Japanese universities have become increasingly diverse institutions, employing international faculty members from a diverse range of ethnic and cultural backgrounds and attracting students from all over the world. In order for possible cross-cultural connections to be successful, increasing students' intercultural awareness has become increasingly important (Egitim, 2021)[115]. As a result of this internationalization, English education in college now places an emphasis on student-centered instruction and the

facilitatory role of the teacher in helping students build their own learning strategies (Benson, 2013)[116]. By involving students in the debate and presentation of varied multicultural themes, teachers focus on content-based language instruction. The problem is that many students have become accustomed to teacher-controlled instruction with an emphasis on admission exams, and thus have difficulty adapting to a learner-centered educational environment (King, 2013, Loucky & Ware, 2016)[117][118]. Hence, amplifying the chance of this dual-lingual communication in university campus would bring back lots of benefits. The international students can use this communication to practice Japanese with Japanese students, while Japanese students can study English from the foreign students in a more relaxed and less-stressful setting.

Chapter 4: Proposed system

4.1 Introduction

It is probably possible to simply carry out the dual-lingual communication even in a face-to-face communication. However, our objective is to make it effectively possible to collaborative acquirement of the speaking skill of the second language through the dual-lingual communication. For achieving this objective sufficiently, it is required to perfectly carry out the dual-lingual communication where several unusual communication patterns are imposed on, such as the strict turn-taking where overlapping of utterances is not allowed at all. Therefore, some functions that support carrying out the unusual communication patterns for efficient acquirement of speaking skill are required. Hence, we developed a web CSCL application called “BiTak” to facilitate the dual-lingual communication for language speaking practice.

Ogura, K., & Nishimoto, K. developed a voice chat system named “ChaTEL,” which can record the utterances for the re-listening to achieve multithreaded voice communication [84]. The ChaTEL system is equipped with a “ history of conversation” as well as functions that specify receivers of messages and related messages which make it possible to simultaneously talk about multiple topics with voice communication. (See Fig.5)

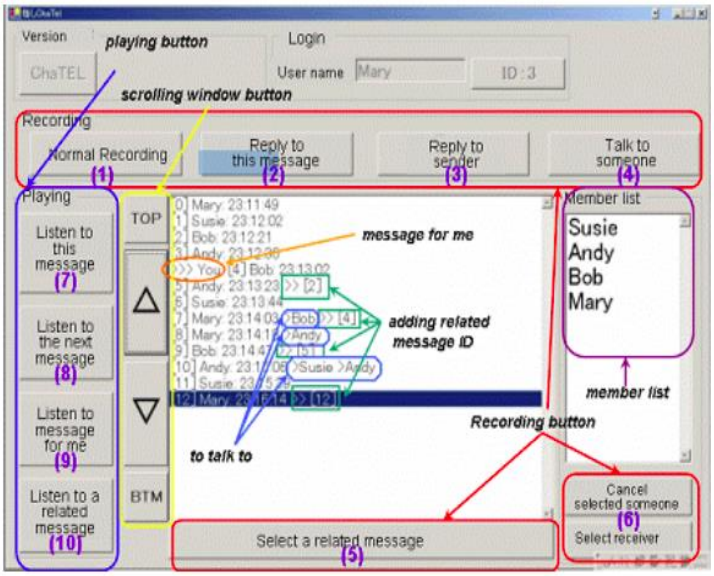

Figure 5: ChaTel system

The aim of the study is to investigate whether multithreaded conversation can be done by voice and to evaluate the usefulness and effectiveness of the newly added ChaTEL recording/listening functions for facilitating multithreaded conversations. From the results, they concluded that it is possible to simultaneously talk about multiple topics with voice communication. The newly added recording function of ChaTel has inspired me in thinking of creating a video chat system to support group conversations in which their voice will be intentionally recorded so that users can watch their video talk again to deeply understand the situation.

I developed “BiTak” using the open source from WebRTC, which is a free, open project that provides browsers and mobile applications with real-time communications with simple APIs. WebRTC provides the publish/subscribe model letting developers implement many types of chat such as 1-1, group or random pairings. Fig.6 and fig.7 show the snapshots of the homepage and user interface of BiTak respectively.

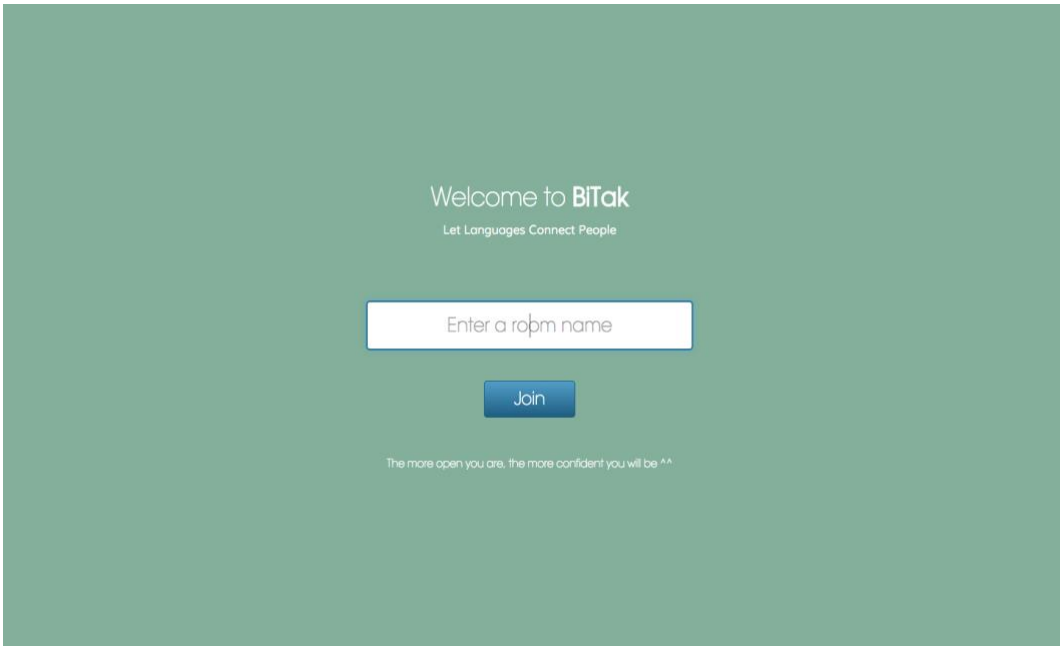

Figure 6: The homepage of BiTak

The design of BiTak is aimed to be friendly to users. As can be shown from Fig.6 all you need to do is just create any name for your room chat and click “Join” button to access the chat room.

Having individual control over the layout, sizing and animation of each individual video stream allows the video chat to be a native and fully-integrated part of the web experience.

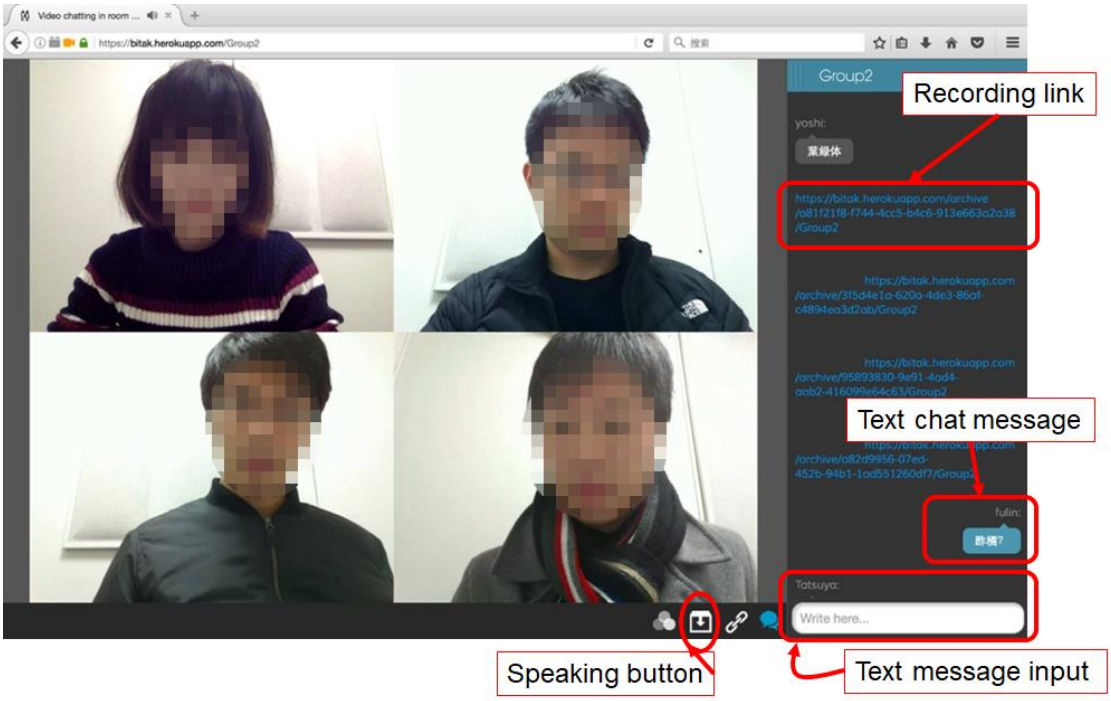

Figure 7: The user interface of BiTak

As can be seen from Fig.7, there are various features provided:

- ✓ Filters: this feature is used to change the screen chat color using the available colors in filters (Sepia, Inverted, Grayscale, Blur or None shown in Fig.8) in order to give users some interesting experience while chatting.

Figure 8: Filters function

- ✓ Start Speaking/Stop Speaking: when a person wants to talk, he/she needs to click this button then his/her talk is automatically recorded.
- ✓ Share Room Link: to copy the link for inviting people to join the chat room
- ✓ Text Chat: for typing the text conversation

The most prominent features of BiTak is following two functions: 1) a strict turn-taking function by discretely recording each utterance and 2) a text chat function related to each recorded utterance. In the following sections, these two functions are described in detail.

4.2 Strict turn-taking function

To communicate in BiTak, all participants are required to take turn strictly. When a person wants to talk, he/she just needs to click on the Speaking button then the others' microphone will be off; they can do nothing but listen to the speaker. At the same time, his/her voice will be automatically recorded. After the speaker finishes talking, he/she clicks the Speaking Button again, and then the recording link (blue link) will appear in the main window chat (See Fig.6). The next person will take turn to talk by repeatedly clicking the Speaking Button. Therefore, the communication style with using BiTak is in a half-duplex manner similar to that of a transceiver. Each utterance in BiTak is recorded in order to give participants a chance to watch the video again to fully understand the dual-lingual situation. I created Speaking button in order to make users follow strict turn-taking mechanism. However, they can also communicate ordinarily to each other if they do not click the button.

4.3 Text chat function related to each recorded utterance

The recording link will lead users to another tab where they can re-watch the video (see Fig.9). Meanwhile, the main video chat will be still facilitated without any interruption. If, for example, an utterance in English from a Japanese participant includes some errors or unsuitable expressions, it should be corrected immediately. In order to readily achieve it, we provide a text chat function to each recording link, not to entire recording links. The users can chat, ask or point out about any unclear points by typing text in the chat bar right beside the recording video. This feature is separately designed for each recording link with the hope of achieving deeper understanding. The users can download all the recording videos for further reference.

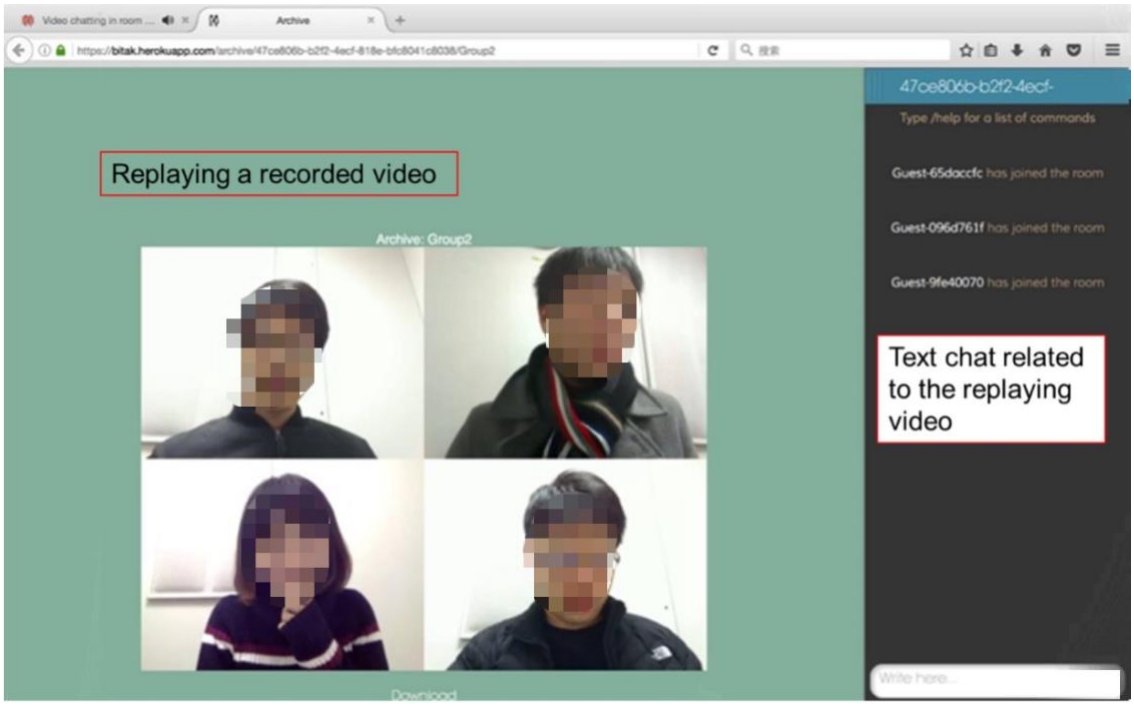

Figure 9: An example of recording link

Chapter 5: Experiment and Result Analysis

This study aims to propose a theoretical model of dual-role collaborative learning to enhance simultaneous acquisition of speaking ability of second language learners. It is hypothesized that learners will play two roles in the conversation: facilitators in their first language and receivers in their second language. This model cannot be easily achieved with normal face-to-face communication so that some supporting features need to be provided. As a result, based on the dual-role collaborative learning paradigm, we designed Bitak, a video chat system with multiple functions to assist simultaneous development of speaking skills in a second language.

Through designing experiments and evaluations, this research intends to seek answers for the following research questions:

• Is it possible to achieve simultaneous second language acquisition by applying Dual-role Collaborative Learning model?

• Is Bitak useful for carrying out Dual-role Collaborative Learning model to attain simultaneous acquisition of speaking ability of second language?

5.1 Experiment Procedure

To investigate the effectiveness of the proposed method for simultaneous acquisition of speaking skill of the second language as well as to verify the validity of BiTak system, we conducted user studies. There are 32 students participating in the experiment process (16 Japanese with multi-level English abilities and 16 foreign students mastering English) and were randomly divided in 8 groups of four. Each group consists of 2 non-Japanese students who speak English fluently as native speakers and 2 Japanese students. All the chosen students were voluntarily participated in the project and the equal level of second language proficiency between a pair of speakers in the

experiment is not necessarily required. It is better to test the effectiveness of Collaborative Learning at different levels to see if they can help each other enhance their second language speaking skills.. I compared the experiences of the four 4-member groups using all the functions of BiTak with the other four 4-member groups who used just the interface of BiTak (i.e., a simple video conferencing system without the strict turn-taking function and the recording function). Meanwhile, both of the two groups were required to communicate in the dual-lingual communication style regardless of with/without using the BiTak functions.

Each group was required to participate in a series of six experiments in which they could discuss intensively the topics given in the evaluation interview using Dual-lingual Communication. Each experiment lasted about 90 minutes. To ensure unbiased improvement, all subjects were requested not to use any other kinds of language learning tools during the period of experiments.

All subjects were supposed to attend pre-experiment evaluation and post-experiment evaluation to measure the improvement of speaking skill before and after the abovementioned experiment series. Specifically, the Japanese students were interviewed their English speaking skills by a certified English teacher and the non-Japanese students were interviewed their Japanese speaking skills by a certified Japanese teacher. The interview questions during the two evaluations remain unchanged and their improvement is assessed followed a rubric for Testing Speaking Skill specially designed for the task (See Fig.10 and Fig.11). The criteria for this study's analytic rubric were taken from the standards and practices outlined in the Common European Framework of References (CEFR) for Languages (Council of Europe, 2014)[119] with the most common criteria for oral performance assessment. The analytical technique is used to evaluate students' performance by examining different

portions separately first, then combining the outcomes of individual scores to obtain a final total score. Criteria and scales are the two pieces of an analytical assessment rubric. This technique of assessment offers students and teachers with vital information regarding areas of strength and weakness. (Ulker, V., 2017)[120]

In addition, after the experiment series, each subject was also asked to attend a 30-minutes individual semi-structured interview with the first author. The individual interview questions were guided by the general themes which aim to gain thinking about dual-lingual communication and BiTak's features (strict turn-taking with the recording function). Besides, the questions were also open-ended enough for me to be able to pursue new topics raised by the participants. Each interview was recorded and transcribed to text then the transcripts were informally analyzed.

Rubric for Testing Speaking Skill

Task Description:

Relevance and Content

10 / 9	Communicates significantly more information than required to fulfill the task; includes elaboration and detail.
8	Fully satisfies the requirements of the task; includes all relevant information.
7	Communicates adequate information to fulfill the task.
6	Attempts to address the topic but few relevant information, the amount is less than adequate.
5 - 0	Provides almost no information, or there is not enough speech to evaluate.

Fluency

10/9	The answers are smooth and flowing. No hesitancy or rephrasing.
8	The answers are smooth for the most part. Occasional hesitancy. Some rephrasing.
7	The answers are generally hesitant and often choppy.
6	The answers are extremely hesitant and choppy. Frequent pauses and/or unfinished phrases.
5 - 0	The answers are is limited to isolated words or short phrases. No fluency.

Vocabulary and Word choices

10 / 9	Uses a sophisticated range of vocabulary appropriately.
8	Uses a fairly wide range of vocabulary. Most of vocabulary is used appropriately.
7	Uses an adequate range of vocabulary, but sometimes inappropriately.
6	Uses a limited range of vocabulary. Vocabulary is often used inappropriately.
5 - 0	Shows no command of vocabulary.

Interviews: Does interviewee understand questions?

10/9	Understands all questions. No repetition necessary.
8	Understands most questions. Occasional repetition necessary.
7	Understands approximately half of the questions. Repetition is often necessary.
6	Understands only a few of the questions. Repetition frequently necessary.
5 - 0	Understands no questions. Repetition and/or rephrasing of questions is always necessary.

Figure 10 Rubric for Testing Speaking Skill

Time	Topic	Questions
2mins	Self-introduction	• Say something about yourself: hometown, major, hobbies…
2mins	Entertainment	• What is your favorite form of entertainment? • In your opinion, which kinds of TV programs are waste of time? (love stories, adventure stories, mysteries, comedies, documentaries, game shows, horror) Explain your answer.
2mins	Travelling	• Do you like travelling? If yes, how often do you travel? • How do you feel when you come back home after a long journey?
2mins	Happiness	• What do you think of happiness? • What do you like to do when you are happy?
2mins	Social network	• What kinds of social network websites would you like to use? • Is it good to find friends on social network?

Figure 11 Questions in the Rubric Evaluation Interview

5.2 Result Analysis

In this section I would like to present the score results from Rubric Evaluation as well as the comments of the two evaluators. Besides, the analysis of semi-structure interviews and experiment transcripts are also included.

5.2.1 Result of Rubric

The speaking performance of all subjects in the evaluations were assessed by four criteria:

- Relevance & Content
- Fluency
- Vocabulary & Word Choice
- Interviews: Does interviewee understand question

Figures 12~15 show the specific scores of each participant evaluated before and after the experiments in all four criteria mentioned above.

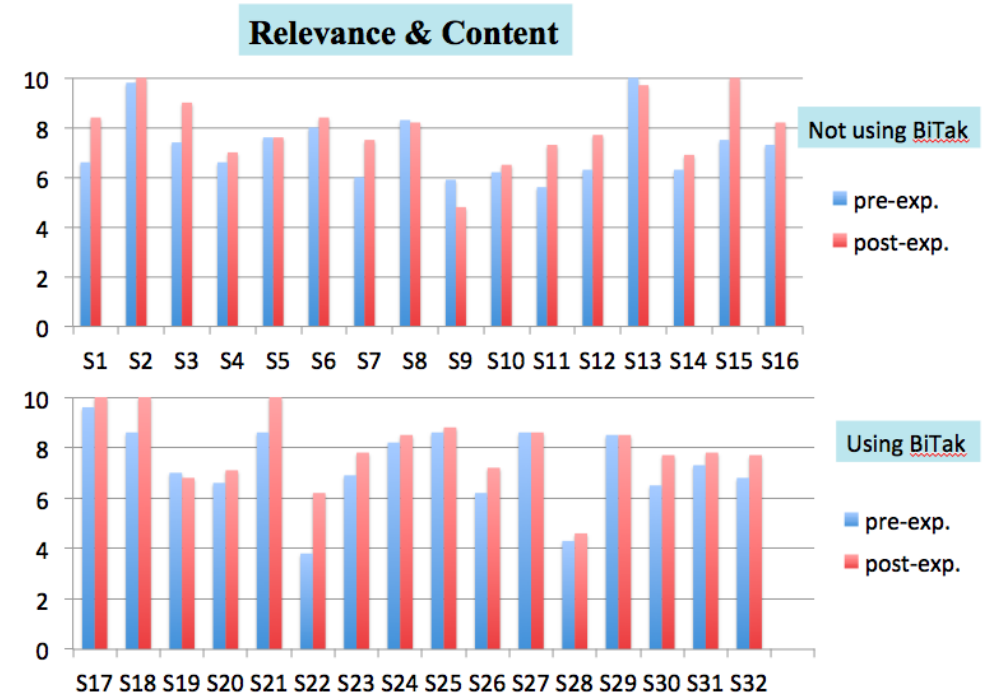

Figure 12 Scores of participants in Relevance & Content

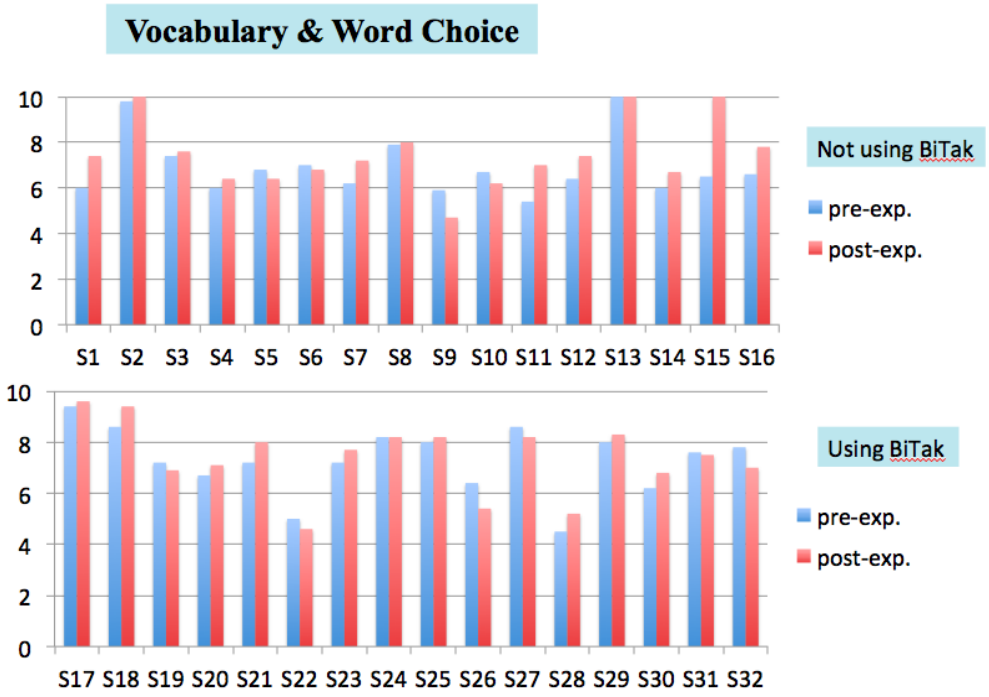

Figure 13 Scores of participants in Vocabulary & Word Choice

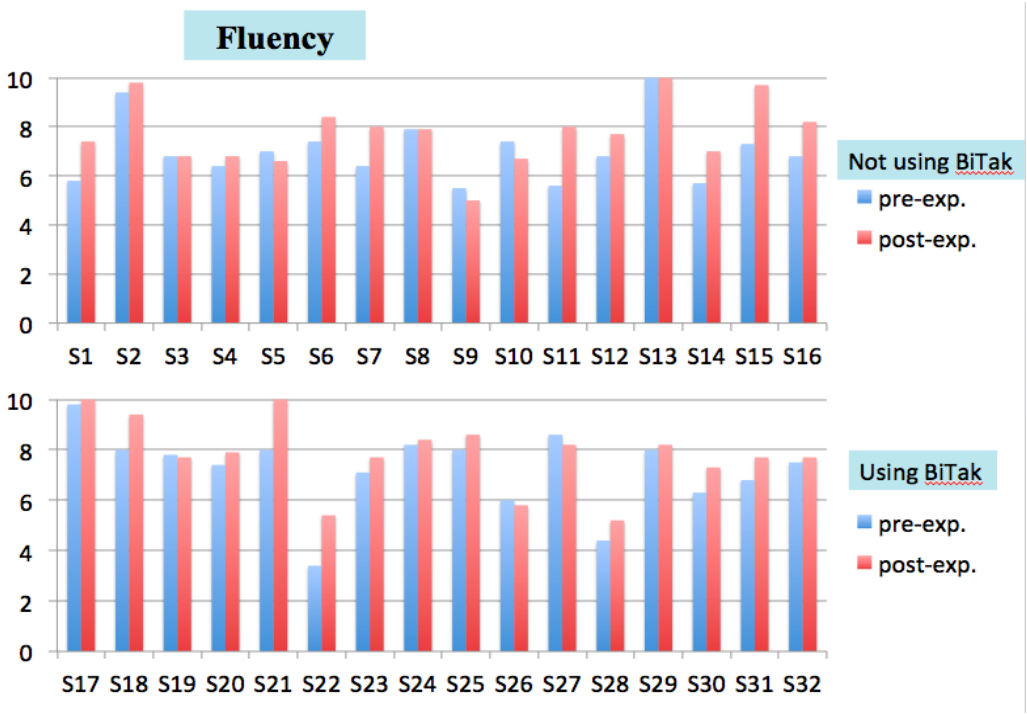

Figure 14 Scores of participants in Fluency

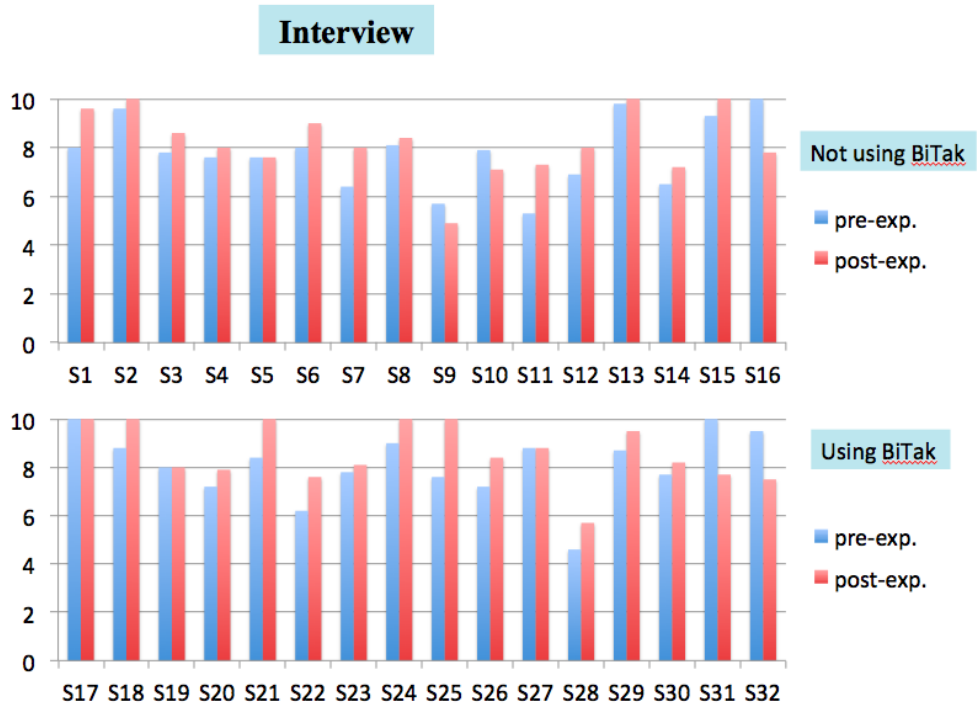

Figure 15 Scores of participants in Interview

As can be seen from the Figs. 12, 13, 14 and 15, a majority of participants showed sufficient improvement between the pre-experiment and post-experiment evaluation. The distinctions also varied from small to big proportion in both groups.

The improvement difference of each participant between pre-experiment and post-experiment based on their scores in Rubric was calculated. Here, considering the ceiling effect, the students with pre-experiment score equal to or bigger than 8 were eliminated. Those students with these high scores may have little room for improvement and it is not the target of this study. After eliminating those students, the number of students in each group are not equal. The figures 16 to 19 describe specifically the improvement difference of students between the pre-experiment and post-experiment in each criteria (Relevance & Content, Vocabulary, Fluency and Interview). Basically, most of the participants' skills were improved by the average (>0).

Relevance

	bitak_j	bitak_e	non_bitak_j	non_bitak_e
0	-0.2	1	1.8	-1.1
1	0.5	0.3	1.6	0.3
2	2.4	1.2	0.4	1.7
3	0.9	0.5	1.5	1.4
4		0.9	0	0.6
5				2.5
6				0.9

Figure 16 The improvement difference between pre-experiment and post-experiment scores in Relevance & Content

Fluency

	bitak_j	bitak_e	non_bitak_j	non_bitak_e
0	-0.1	-0.2	1.6	-0.5
1	0.5	0.8	0.0	-0.7
2	2	1	0.4	2.4
3	0.6	0.9	-0.4	0.9
4		0.2	1.0	1.3
5			1.6	2.4
6			0.0	1.4

Figure 17 The improvement difference between pre-experiment and post-experiment scores in Fluency

Vocab

	bitak_j	bitak_e	non_bitak_j	non_bitak_e
0	-0.3	-1	1.4	-1.2
1	0.4	0.7	0.2	-0.5
2	0.8	0.6	0.4	1.6
3	0.5	-0.1	-0.4	1.0
4	-0.4	-0.8	-0.2	0.7
5			1.0	3.5
6			0.1	1.2

Figure 18 The improvement difference between pre-experiment and post-experiment scores in Vocabulary & Word Choice

Interview

	bitak_j	bitak_e	non_bitak_j	non_bitak_e
0	0.7	2.4	0.8	-0.8
1	1.4	1.2	0.4	-0.8
2	0.3	1.1	0	2.0
3		0.5	1.6	1.1
4				0.7

Figure 19 The improvement difference between pre-experiment and post-experiment scores in Interview

Basically, all the participants' skills were improved by the average. I statistically test these result by applying Kruskal-Wallis test. As a result, no significant differences (SD) were found in all of the four criteria (P-value (Relevance, Fluency, V&C, Interview) > 0.05 for the 4 groups. It can be said that not only that there are no SD between Japanese and Internationals, but also that there are no SD between BiTak and Non-BiTak. This result proves that there was no SD between the improvement of Japanese and Internationals, which means they could simultaneously improve their speaking skill to almost the same degree through dual-lingual communication.

However, the same conclusion could not be given to the usefulness of BiTak. Namely, there were no significant differences in improvement of using and not using BiTak. It could not be concluded quantitatively that Bitak is useful for simultaneous second language acquisition. The author would like to find it useful through qualitative data (semi-structured interview and transcript analysis results).

Most of subjects received positive feedbacks from the two teachers for their progress during experiment period. I would like to present some noticeable comments of the certified Japanese teacher for some of the foreign students in the pre- and post-experiments are as follows:

Pariticipant No.	Pre-experiment evaluation	Post-experiment evaluation
1	• He wanted to speak. • He sometimes understood only a few words in the sentence but did not understand whole sentence. • This caused him misunderstanding and deviated answer. • 4th question, he did not understand "shiawase". I explained in English, but he had no answer.	• He was eager to speak anyways. • He spoke more than I asked. But it is often grammatically incorrect. • He seemed to only listen to the words, and he talked with his understanding. • His explanation about shiawase was adequate information.
2	• He was the person who responded only to what he was asked. • He was not good at numbers such as month, date…, but he could describe his feeling.	• He speaks more than last time. • His talking seems to be practiced. • He mostly understands the question.
3	• She did not understand "kenkyuka" "doushite". • She could say "mou ichido onegaishimasu" when she didn't catch the questions. • She understood "shiawase" but could not describe in Japanese.	• She mostly understands the question. • She could describe her feeling by elementary words. • She had communication strategy.
4	• He mostly understood the questions.	• He mostly understands the questions.

	• It seemed that he could not find the better words, but he tried to answer by the words which he knows. • He spoke slowly with remembering.	• Lexical collocation gets better than first interview.
5	• She understood most of the questions properly. But it seemed she was getting used to speaking.	• She spoke like well trained.
6	• She seemed not to understand fully the questions but got some of the words in one sentence and guessed their meaning. It was sometimes correct and sometimes incorrect.	• She could explain element question stably.

Comments of the certified English teacher for some of the Japanese students in the pre- and post-experiments are as follows:

Pariticipant No.	Pre-experiment evaluation	Post-experiment evaluation
1	• English proficiency is limited, not so much vocabulary, • In the beginning, smooth talking but soon got stuck, • Seemed to understand the meaning of questions, could not use all the time for answer	• Answers were succinct, • Seemed to understand the question clearly.
2	• Very proficient in English, almost no problem	• Very fluent in English • Good communication, understand questions clearly

		• Never losing timing in communication, English seems to be working like his mother tongue • Answers were succinct.
3	• English proficiency is high • Depending on questions. fluency varied	• Have a smooth communication in English, • Stated his own ideas clearly • Never miss a timing
4	• Not confident in English communication • No fluency • Probably the questions were understood but could not answer fluently with sufficient contents	• Vocabulary was limited, • Gained desire to communicate • Didnot use the given time effectively • Carry his own opinions.
5	• Not smooth in responding to the questions • Limited vocabulary • Using too much time for thinking, seemed to think in Japanese and translate.	• Desire to talk, • Pattern is think and speak • Vocabulary may be limited but seemed to understand the questions clearly.
6	• Understood questions clearly, • Had some hesitation in answering depending on the topics, has things to talk about	• Smoothness was missing, • Essential grammar understood.

5.2.2 Results from individual semi-structured interviews

The 30-minutes individual semi-structured interview was held with every member to obtain an insight of their feeling throughout the six experiments. The open-questions related to dual-lingual communication and functions of BiTak were all mentioned such

as their general feeling after using BiTak, the comfort of using Bitak or their opinions of applying Bitak as a supporting tool to learn second languages.

- **Not-using-BiTak Groups:**

These groups communicated using just the interface of BiTak like a normal video-conferencing system, which means the strict turn-taking function and the recording function were not available.

Although all the subjects found that dual-lingual communication weird and hard at first, they gradually recognized it really helps people from beginner to intermediate level. The more familiar they get with BiTak, the more motivated they are to speak.

"The dual-lingual communication is interesting, at least we can understand if we are not good at other language because we can understand. I can learn language from that communication to get vocabulary and sentence patterns."

"This kind communication may help some people who is not really confident or someone is easy to become nervous when speaking with foreigner. For instance, at the 1st time Yuki-san was really shy and he could not say any word but now he gradually talks more."

"I can help people speak Japanese and gain more confidence. Honestly, I'm not good at listening to English…. This kind of communication somehow helps me. It reduces my stick perfection, I used to think how to speak English perfectly all the time, but now I can ask people the word I don't know... Shun-san has good pronunciation and a confident style so that I can learn from him."

"It is interesting and gives me good motivation, sometimes I don't know how to say and they help me by writing in the text chat in Roma-ji, and then you can remember but maybe forget later."

"Yes, I think it helps a lot. I myself know the meaning of word in Japanese but it's hard to put in sentence so thanks to having chance to talk with Japanese natives, I can use those words correctly. And I think it has the same effect on Japanese ones."

"I got the chance to talk, they kind of encourage me to speak, they give me some answers in Japanese word choice."

"Positively I can improve my Japanese by talking with natives. It's a bit difficult for me to talk about different topics, but I can make friends and improving my speaking."

"At the 1st interview, I didn't know much Japanese vocabulary, but now somehow I know how to express, I like this kind of experience, I learn how native says and how Jap use English….. I gain more confidence, I become friends with group members, they're funny, interesting. I feel relaxed talking with them."

When being asked about helping to correct others' mistakes, some of subjects in the group revealed that they hesitated to do that due to they were in the middle of conversation. They sometimes recognized their friends' mistakes but neglected them to wait for the conversations to finish then unintentionally forgot the errors.

"I feel hesitate and not try to correct their mistake because don't want to interrupt and make them feel shy."

"I didn't correct so much because they didn't talk much in details, just use simple sentences".

- **Using-BiTak Groups**

These groups communicated using BiTak with using all functions. Therefore, they were forced to obey the strict turn-taking rule that was systematically imposed on by BiTak.

For the first time, it was really difficult for those groups to use strict turn-taking. However, the members gradually reported that this system aims to learn language, not merely for chatting. When they did the presentation using BiTak, only one person had to talk. They felt that it was a good challenge for them because they could do a lot of presentation to train their speaking skill.

They all agreed with the idea of dual-lingual communication can help them learn speaking skill of second languages. Japanese students normally do not have chance to speak English much and vice versa for foreign students so it has mutual benefits. They could gain some new words and correct the mistakes they usually made before. In their opinion, this kind of communication may not be comfortable for chatting but effective for learning languages.

"*I think it's good. I can have the feeling of study…It is not normal communication. It's good for study.*"

"*I also think it's good. I do not have much vocabulary… I cannot make the sentence. I cannot express my idea clearly. After two experiments, I can gradually learn how to make the sentence…*"

"*I am not good at listening. If just one person talk at a time, I feel more focus on what they are speaking. This way really suits me.*"

"*I had no problem with the dual-lingual communication as well as strict turn-taking. When I clicked the Recording button, just only me is speaking. I felt comfortable because no one is overlapping me…I can slowly speak Japanese*…"

As can be inferred from the answers of subjects, dual-lingual communication was not a hard approach to be reached. Most participants felt comfortable to communicate in this way. They almost follow the strict turn-taking appropriately.

All group members pointed out that strict turn-taking feature gave them time to think carefully before raising their voice. They consequently had confidence in expressing their ideas.

"*I need another system to compare. Of course I feel it's good but I have nothing to compare. However, I feel it is easy to use this new system for the first time using it. The Recording function is really good because I can check my pronunciation and take care of my sound. When I check past information, I can access the data, but the frequency may not high … but it is really useful when I want to do that.*"

" *After listening again the recording videos, I even downloaded the videos…I want to watch them again after the experiment* "

One more interesting point the subjects found was recording link. Most of them felt this feature was really important because they could listen again their friend's presentation all the time to recognize and corrected mistakes for each other. Some participants were aware of the function of downloading videos and he even downloads some from the experiment for further reference. Besides, they have gradually realized the language learning atmosphere from the conversation, not just the informal communication as usual. Moreover, they are getting used to Recording function and want to use the Recording. They were willing to listen again the recording video. Meanwhile, they even write the word they want to correct for others on the side chat bar (see Fig.12).

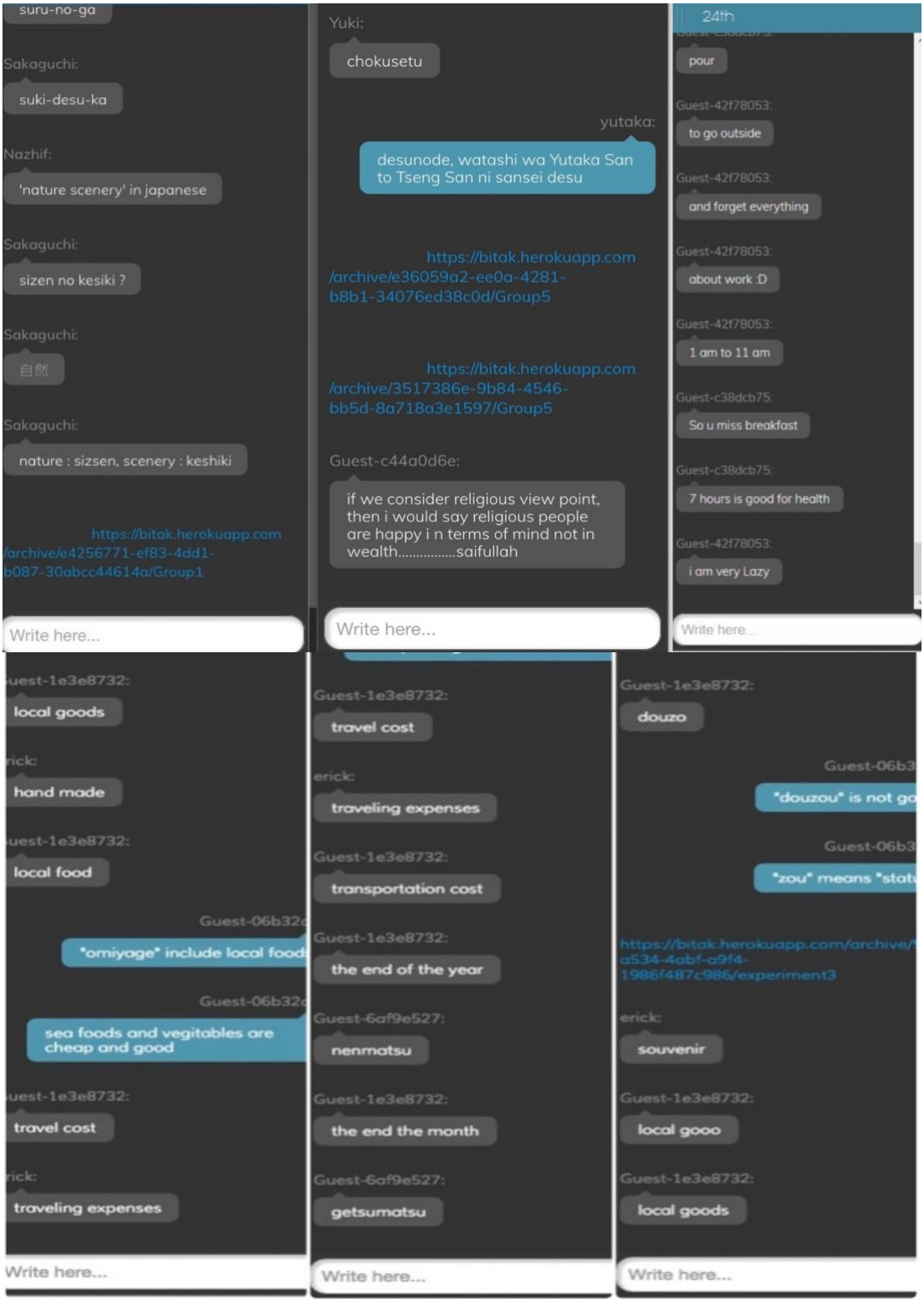

Figure 20: An example of correcting mistakes by typing in the side chat bar

"When I don't have any word to explain my mind, somebody can help me write in the text chat and I see that and understand to speak it out, I feel good. I like this app because I don't like face-to-face communication, this app makes me feel comfortable."

More interestingly, after watching again each recording video of everyone, people did not hurry to click the recording button for another turn-taking. They wanted to correct the mistakes of others by speaking either both languages in ordinary conversations. They deliberately discuss the way to communicate in BiTak without any instructions of the authors to make the communication went smoothly: applying dual-lingual conversation with strict turn-taking for presentation, using recording link for realizing mistakes and normal conversation for correcting mistakes and discussion.

"I think we connect very fast. The first day with them was a bit hard because it was new, we were shy. But in the second time, we were explaining further and using the function, the first time is really difficult because nobody knew using it correctly, but the second it improved, and in the third experiment, we were actually using Recording function. And because the guys are willing to improve their speaking skill, they paid much attention, wanted to listen to the video again… The good thing in BiTak is you have to set your mind in a different way, you have to prepare to come to the experiment… I have the feeling if we know the topic in advance, you can prepare some sentences. So when we are doing experiment, the other guys can listen easier and correct the mistakes for you… So what I want to suggest is like, for future users, it is better to prepare a couples of sentences and then speak them out but not more than 3 or 4 minutes each time or else people will get tired when listening. And after that, we should come back to the normal conversation to discuss about the utterances."

As can be understood from his answer, all participants became more and more active through the consecutive experiments. They were better aware of the Recording

function, using it for checking again the speaker's talk and fixing the mistakes if possible. This kind of function is kind of unfriendly function for everybody but they managed to use it. This feature is not easy to use because it will interrupt the normal conversation. However, the subjects already immersed in the virtual online learning environment, not just informal conversations.

In addition, one participant even expressed his suggestion for future users. From the experiment results, it can be admitted that incorporating the dual-lingual communication and the normal communication at the same time is an interesting point: Using strict turn-taking to assure everyone can talk, recording to listen again, and normal conversation for further discussion.

They eagerly continued to help other fix mistakes by listening the recording together, just used normal bilingual conversation to discuss the flaws and wrote the word they wanted to correct on the side chat bar.

"*I really enjoyed the third and fourth experiment… Everyone know how to use the system actively…I prefer preparing for the recording in advance, speak for 1 minute long, for sure it will be more perfect, and experiment will be more interesting… Prepare before coming to experiment…Speaking Japanese in front of Japanese people is really useful. I feel more confident in spite of my limited Japanese speaking ability."* (English)

"I found it interesting to use the system… Recording function is useful. However, the recording link is a bit ambiguous for me. It is difficult to find the link I want to listen again. It would be better if we can name each recording link specifically." (Japanese)

"*I have more intention of speaking English than before. The strict turn-taking allows me to fully express my idea…I like to check recording video again, find flaw for each other, have common purpose… good system!"* (Japanese)

"*Very useful…I am pushed to speak English more, gain more vocabulary and make sentences, chance to learn speaking, translation…I felt very comfortable while communicating ...But in my opinion, recording function is good for talk long sentences, it is not convenient for short or response quickly"* (Japanese).

"*In this kind of discussion, I think strict turn-taking is important, we have time for ourselves to think, when s.o is talking we will not interrupt, meanwhile we can take note what we want to say next. It's going well in my group."*

In general, after finishing the experiments, all participants gave out positive feedbacks about the dual-lingual communication and CSCL BiTak. Everyone used the system more and more actively throughout experiments. For internationals, it was a great experience to practice speaking Japanese with native speakers. The Japanese participants felt more confident in speaking English. However, the recording link did not satisfy all the subjects. One claimed that it is difficult to differentiate each recording link that often made her confused in choosing the video she wanted to watch again. Another member suggested that Recording link was suitable for making long sentences like presentations and it is not convenient to talk or response quickly with short sentences.

5.2.3 Analysis of the transcript

In addition to the above-mentioned basic analyses, I carried out an in-depth analysis of the transcript in order to achieve a deeper insight into the process of improvement of learners. Based on this analysis, the dual-role collaborative learning method as a novel learning style is naturally and clearly applied in the dual-lingual communications where the BiTak is used.

- **Not-using-BiTak Groups:**

Here are some examples from the transcript:

A) *E1: "let's start" wa nan desu ka?*

J1: Hajimemasho

E2: "Accomodation" wa nan desho?

J2: In Japanese… "Shukuhaku shisetsu"

B) *J1: When did you go to Japan?*

E1: kotoshi, shigatsu…san nichi??

J1: Mikka.

E1: ah, shigatsu no mikka, arigatou

C) *J1: If I have money, I want to go to Germany.*

E1: "Germany?" Doko?

J1: Eh?

E1: "Germany" wa doko?

J1: Doitsu no doko?

E1: Ah…

D) *J1: How about winter in Japan?*

E2: Samui desu. Arerugi ga arimasu.

J2: What is "arerugi" written in English?

E2: It's allergic.

E) *E1: yasumijikan wa nani o shi masu ka?*

J1: I sleep. Hmm.. I feel sleepy…

E1: "I often feel sleepy."

J2: In my case, for relax, for example, walking or swimming…hmm…

E2: Ah, you usually go swimming or walking in your freetime?..

J2: Oh, yes, yes…

J1: I usually driving around ... the town.

E1: "Driving license" wa nihongo wa nan desu ka?

J1: Unten menkyoshō desu.

E1: Ah… arigatou.

F) *E1: Tomi no hito wa "not always"..How to say "not always"?*

J1: (write in the text chat) ..itsumo..dewanai

E1: Ah, tomi no hito wa itsumo shiawase dewa nai.

G) *E1: rirakkusu no tame ni nani o shimasu ka? (What do you do to relax?)*

E2: "tame ni" wa nan desuka? (What does "tame ni" mean?)

J1: it means "about" or "for". For example in my case, I go walking or swimming for relaxing.

E2: Ah.

J2: I go to my bed to relax. (slight grammatical mistake but there's no correction from Es)

As mentioned in 5.1, Not-using-BiTak were required to use Bitak as a normal video chat application without using the strict turn-taking function and the recording function, and to communicate with each other through dual-lingual pattern. The result from transcript revealed that they had good experience with dual-lingual communication. However, they may not notice the intention of language learning clearly. They followed our requirement to talk in group with various topics provided. As can be seen from example A to F, if one member had difficulty in finding the suitable word, they mostly raised their voice to ask for help, otherwise the others just ignored the member's mistakes (example G). From some typical examples above, it is clear to realize that they usually asked for unknown vocabulary, no more getting deeper in word using and keep continuing the conversation topic by topic. They easily finished

discussing the topic questions in the time limit as normal chatting. They did not care much about others' mistakes. It was alright as long as they understood and then they gradually forgot to correct mistakes for each other. It is not good for language learning. It was difficult to conclude the facilitator in this collaborative group because their roles were not clearly identified.

In addition, there were many times that participants did not have their concentration on the given topic. They kept talking and gossiping, gradually forget the questions they have to answer. Let's take example (H) in consideration (they were required to discuss about the question "*What kind of TV program is a waste of time"*):

H) J1: Did you watch TV when you were a child?

E1: Arimasu/Yes. (two pp answer at the same time)

J2: what program did you like?

E1: Anime, Watashi no childhood wa Pokemon, Doraemon.

J2: Is it famous in your country?

E1: Hai…WWE mimasuka?

E2: Wakarimasen.

J1: America's programs? Yeah I know. I like it.

E1: Watashi wa maigatsu mimasu.

J1: You mean Every month? It's maitsuki.

E1: Kana-san mo nani wo mimasu ka?

J1: When I was an elementary student, I like to watch quiz show, very easy quizshow for elementary students. I also like watching anime or drama because those kinds of thing I can make every single story…

J2: Do you like watching Youtube? I like it very much.

E1: Watashi mo suki.

E2: Watashi wa indo no channel ga suki.

E1: Watashi wa ryori channel yoku mimasu.

J1: Can you cook? Japanese food or Myanmar food?

E1: Hai. Oishikunai to omoimasu.

J1: I like music videos.

E2: Watashi mo ongaku suki desu yo.

J2: Me too.

E2: youtube de…(people cannot understand. They keep aksing what??)

(One member even opened the music to show others the music he liked. The gossip time last too long, no longer serious in the questions provided. The experiment time was ended without finishing the topic questions).

- **Using-BiTak Groups**

Here are some examples from the transcript:

I) *J1: Modern lifestyle gives us so many time to relax… in the past has to do many thing, for example, do laundry…But now we don't need to do in many time.*

E2: shabete no toki wa Subject wa arimasen ne. You should say "in the past people had many thing to do.."

J1: Ah, I see.

J) *E1: (misused between ippai and isogashi)*

J1: "Shigoto ga ippai" means I have a lot of work. "Shigoto ga isogashi" means I am very busy. So it's different.

E1: naruhodo. Sorekara, Shigoto ga ippai na no de, isogashi desu.

J2: Oh yes.

E2: Hai, arigatou…

K) *E1: Saigo no bun no imi wa chotto wakarimasen.*

J1: Ah I said "I travel to foreign country about one time a month"

E1: You said "one time", I think "once" is better.

E1: Ryokou wa suki desu.

J2: I think instead of saying "wa", you should say "(Watashi wa) ryokou ga suki desu."

E2: Hai.

L) *E1: Minasan wa shigoto shimashita ka?*

J1: Hmm… "shigoto shimashita ka" means "Did you work yesterday?". If you want to ask about working experience, you have to say "Shigoto shitakoto ga arimasu ka?".

E1: Ah, naruhodo. Arigatou. (Ah, I see, Thanks.)

Having different from requirements, Using-BiTak groups were asked to use all the function of Bitak: strict turn-taking and recording function. Therefore, it took them longer time to finish one question compared to Not-Using-BiTak groups. They hardly finished half of the topic questions in the time limit. Each member had three or four times to present ideas through presentation phase. Since they had to listen again the recording, they had more time to consider and find out mistakes for each other. The content of correction was more specific than that of Not-Using-BiTak groups, focusing on not only vocabulary but also grammatical mistakes (see example I and J). Besides, example K and L proved that they intentionally helped each other as facilitators and receivers. Japanese members became Japanese facilitators who recognized and gave feedbacks of Japanese mistakes of foreign members while foreign members were English facilitators who help correct mistakes of Japanese members. In other words,

their roles as facilitators and receivers have been successfully presented in this kind of collaborative learning.

As a matter of fact, by employing dual-lingual communication, dual-role collaborative learning naturally happens in most cases. However, the crucial difference between both groups which made this dual-role collaboration more efficiently and clearly utilized is the usage of strict turn-taking and recording link. Members in Using-BiTak groups took the recording links into serious consideration. They wanted to make sure their friends know their mistakes and were willing to correct for them. All of them gradually had sense of learning, not simply gossiping on the account of the proposed features of BiTak.

5.3 Discussion

From the result analysis, it was demonstrated that simultaneous acquisition of speaking skill of two different languages can be achieved by employing dual-lingual communication. Furthermore, although it was not supported by the quantitative analyses results based on the rubric scores, the qualitative results based on the interview and the transcriptions supported that CSCL BiTak is useful to carry out dual-role communication as a method of the second language learning. By using BiTak, all of the subjects gradually had sense of learning, not simply gossiping on the account of the proposed features of BiTak as well as realizing their role of facilitators and receivers; such things have not been observed in the cases of the groups without BiTak. Thus, these results proved that dual-role collaborative learning method is effective in simultaneous second language acquisition.

Dual-lingual communication is novel and effective in simultaneously acquiring second language learning. During experiments, Japanese spoke English and

internationals used Japanese. This kind of communication is basically unnatural to everyone, however, it seemed that no one faced any inextricable difficulties with this dual-lingual pattern. More interestingly, when participants are required to practice dual-lingual communication they gradually realized the sense of learning second language, not just using language to communicate. All members unconsciously set their mind in studying to improve their language ability.

The smooth turn taking system usually ensures that the flows of conversations can naturally carry on unambiguously and coherently. However, in dual-lingual communications, especially in using BiTak, users are required to obey strict turn-taking to communicate. This communication manner is apparently unnatural in making informal conversations and easy to make people feel annoyed or uncomfortable if they have to wait until their turn to speak. On the contrary, the results from all experiments have shown that strict turn-taking successfully facilitating the simultaneous second language acquisition. Additionally, in the cases of using BiTak, the numbers of talking-turns increased throughout the experiments and the numbers of utterances in each turn also were considerably high comparing to the cases without using BiTak. This also means the BiTak function plays a considerable role in supporting users conveying their ideas or practicing second language.

The purpose of creating Recording function by pushing the Speaking button is to help users watch the video again in order to ask the others about what they are still not clear or confused. The images of body language and sound in the videos can be hints for users to improve their speaking skills. The recording function gained its confirmation of efficiency through a long-term experiment. At first, people also felt annoyed to be asked to watch again the recording video in the middle of conversation. Nevertheless, their attitudes changed after realizing the atmosphere of language

learning when using BiTak. The importance of recognizing and correcting mistakes by watching videos again was gradually stabilized throughout the series of experiments.

Chapter 6: Validity of Dual-role Collaborative Learning Model

Implementation of collaborative learning structures in language may increase student-student interaction, and a natural integration of speaking, listening, reading, and writing— essential skills of language learning process. Learners have chances to interact with peers through authentic communication, thus acquiring language naturally. Traditionally, productive skills are the most strongly supported modes within collaborative learning, but receptive skills also play roles. As long as students have willingness to communicate and are autonomous enough to have responsibility in their own learning, a collaborative learning approach would be an ideal option to achieve the purposes of learners' motivation and proficiency. The author would like to emphasize the difference between this novel model and the normal Collaborative Learning in classroom. The grouping or pairing learners for the purpose of collaborating or cooperating together to achieve the same learning goal has been widely researched and advocated. Meanwhile, Dual-role Collaborative Learning Method offers opportunities for learners to attain different goals in the same domain utilizing their roles of being teachers and learners. They give and take complementary knowledge through that kind of interaction.

My dissertation has focused only on acquiring the speaking skill and successfully proved the effectiveness of Dual-role Collaborative Learning Model to this skill. However, it does not mean this model cannot be applied in the other three skills. In fact, it is absolutely applicable in practicing both productive and receptive skills to simultaneously acquiring their target language skills. The examples of the same context

of Japanese and English learners in the following figures could be taken into consideration.

Figure 21: Dual-role Collaborative Learning Model in Writing Practice

Figure 22: Dual-role Collaborative Learning Model in Reading Practice

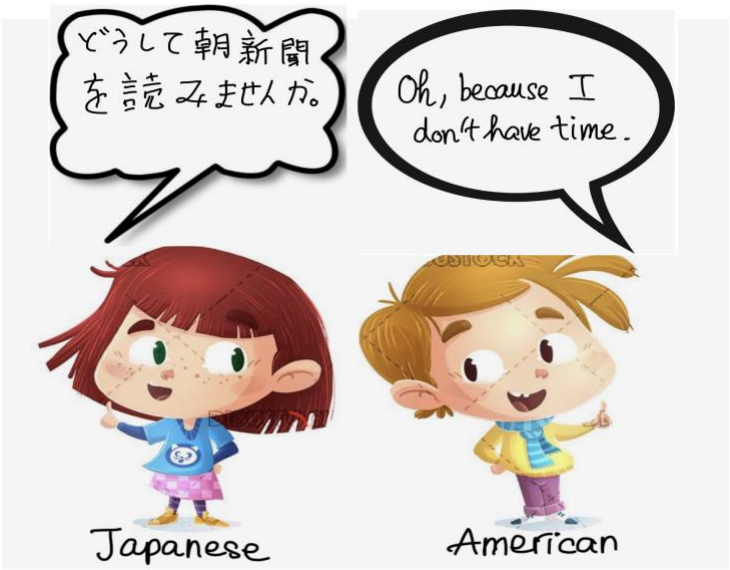

Figure 23: Dual-role Collaborative Learning Model in Listening Practice

Simply speaking, this model might be easily applied in reading and listening (receptive skills) because learners comfortably use their L1 to help their partners practice their

target language (L2) and vice versa. The correction stage is not necessary here. However, regarding to writing (the productive skill), learners are required to correct their partners L2 writing as the same as the speaking practice conducted in this research.

In addition, it is proved that the novel collaborative learning model in my study works well in the online environment. It is advisable to conduct this model in face-to-face setting with some supporting or restricted features. Some implications for this model to be applied in the other domains should also be explored.

Chapter 7: Conclusion and Future works

7.1 Conclusion

In this research, I proposed a theoretical model named dual-role collaborative learning that allows people who have complementary knowledge and/or skills to mutually give and take them at the same time. Based on this novel model, I proposed a simultaneous second language acquisition method by dual-lingual communication and implemented a web CSCL system BiTak to facilitate the dual-lingual communications. BiTak is equipped with three functions, i.e. the strict turn-taking function, the recording function and text chat function related to each recorded utterance, for facilitating dual-role collaborative learning of speaking skill through dual-lingual communication. I conducted experiments with 32 subjects to evaluate the effectiveness of the dual-lingual communication in the second language acquisition and also to evaluate the usefulness of BiTak. The learner's progress is positively evaluated by certified language teachers using a Rubric scoring framework. Based on the experiments results, I confirmed that the dual-lingual communication method allows people to acquire two different languages simultaneously. In addition, the CSCL BiTak has changed the notion of users from an ordinary video chat application to a collaborative learning system thanks to its three prominent features and the learners became able to play their roles as facilitators and receivers to support each other's speaking skill. These findings suggested that the Dual-role Collaborative Learning model is feasible to give and take complementary knowledge and skills at the same time.

From analyzing collected results, I come to a conclusion that it should be recommended to incorporate all the suggested features to achieve best results when practicing second language using BiTak: applying dual-lingual conversation with strict

turn-taking for presentation, using recording link for realizing mistakes and normal conversation for correcting mistake and discuss. As a result, students can take advantage of their role of facilitators and receivers to simultaneously improve their speaking skill.

7.2 Future works

In this research, I proposed a dual-lingual communication method with strict turn-taking for language speaking practice. This way of communication may sounds inconvenient for users who are already familiar with natural conversation with smooth turn-taking, even not to mention the dual-lingual communication when they have to speak their partners' language. Nevertheless, it was suggested that Dual-lingual communication and the strict turn-taking successfully promotes speaking skills based on the experimental results. This fruitful outcome will be a great motivation for me to deeper investigate which unnaturality of natural conversation can be beneficial in second language learning in order to create an ideal environment for people practicing languages. Everyday conversation is based on mutual contingency with equal distribution of rights and duties. Unplanned nature and unpredictable outcomes constitute primary characteristics of natural conversation. Instances of cultural language differences are evidenced in that some languages have specific words for concepts whereas other languages use several words to represent a specific concept. For example, the Arabic language includes many specific words for designating a certain type of horse or camel. To make such distinctions in English, where specific words do not exist, adjectives would be used preceding the concept label, such as quarter horse or dray horse. In addition, difference in social roles, non-verbal cues

(e.g.,facial expression) and contextual cues (e.g., shared experience) is also varied in different cultures. This may cause possible misunderstanding during Dual-lingual communication. Talking while having cultural differences might make people feel uncomfortable or unnatural. Last but not least, I am researching deeply about the characteristics of natural conversation with the hope of finding any unnaturality and analyze whether they can be effective for second language acquisition.

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Publication List

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- Bui Ba Hoang Anh, and Kazushi Nishimoto: A Half-duplex Dual-lingual Video Chat to Enhance Simultaneous Second Language Speaking Skill, in Uskov, V. L., Howlett, R. J., and Jain L. C. (eds), Smart Education and e-Learning 2017, Springer, pp.205-214, 2017. (Refereed)

Presentations at international conferences

- Bui Ba Hoang Anh, and Kazushi Nishimoto: A Half-duplex Dual-lingual Video Chat to Enhance Simultaneous Second Language Speaking Skill, International Conference KES-SEEL-17, 21-23 June 2017, Algarve, Portugal. (Refereed)
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Appendix

Examples of Experiment Transcription

Using-Bitak Groups

1:28- 2:28	In my opinion, I think comedy in Japan is a waste of time. (A)
3:05-4:15	Jibun daisuki no bangumi wa…(I don't know how to say the name in Japanese) (B)
5:43- 6:45	Watashi wa TV bangumi wa (a waste of time) comedy desu. Nihon no comedy chotto…(C)
9:43-10:30	I don’t usually watch TV almost for 2 years cuz I didn’t have TV in my room. Usually I watch news, few times a week, one or two hours each time I guess. (A)
11:28-11:50	Watashi wa TV wo mienai desu ke to, computer de America no dorama wo mainichi ni jikan ni mimasu. (B)
12:40-13:27	Watashi wa TV wo mimasen. Demo watashi wa mainichi Youtube to Netflix wo mimasu, san jikan gurai. (C)
13:56-15:06	

	I don’t really watch TV in my room. So the only time I can watch TV is to eat my lunch in cafeteria at Jaist. But I like watching TV in my house when we got TV. So it’s fun to watch. So if I have money I want to buy a TV someday. (D)
16:06- 16:40	My favorite TV program is TV news. I liked to watch news and want to check information. Also because when I do laundry,..and when it rains I can’t laundry much so I need to watch news. (A)
0:48- 1:15	um…watashi no daisuki dorama wa America comedy to saifai dorama desu. Tatoewa Bigbang Theory… (C)
1:38- 2:03	Watashi no ichiban suki no TV bangumi wa America no dorama desu. Izo desu. (B)
2:17-3:34	My favourite TV program is also TV series, especially TV series in US and UK. May favorite TV series is Walking Dead, The Lost, You know?... The reason I like TV series is because it’s exciting, makes me forget about real life. And in order to do that, I need more excitement. That’s the reason I like TV series. Thank you. (D)
4:02- 4:55	When I was a child, I watched animation. I love aninmation like Drangon Balls or…I don't remember… I also watched old Japanese

5:07- 6:13	ones, American ones like Batman, Superman… Yes, I like watching animation. (A)
6:48- 7:50	Watashi wa kodomo no jikan no toki ni itsumo terebi ni mite imashita. Demo wa watashi wa shogaku no toki, jikan ga nai,… mitenai, eh…(B)
7:58- 9:18	Watashi no kodomo no toki wa TV wo mimashita. Demo, heijitsu wa amari mimasen desu ga, shuumatsu wa TV wo mimasu, yon jikan gurai mimasu…(C)
10:06- 11:20	Yeah, I was also watching so many TV when I was a child, both in weekend and weekdays and I also watch so many programs like comedy, anime, documentaries… Actually sometimes I want to be back to my childhood cuz when I was a child, I can enjoy TV program without worrying about anything. Now I couldn't enjoy TV program because when I watch TV, I don't know why but I couldn't think about the program. So I want to go back to my childhood. (D)
11:55-12:36	OK so I love animation…I watch Discovery and… I don't know how to say in English… That was fun watching it. (A)
13:00-13:45	…manga wo mimashita, kodomo no toki. (B)

14:00- 14:57	Watashi no kodomo no toki ni TV bangumi wa nihon no animation. Tatoewa Conan toka, Dragon Balls,…yea…(C)
15:20-16-55	The TV program I watched when I was a child is comedy, documentary, anime. The most frequency is anime. My most favorite anime is the same with Nazif-san, it is Dragon Ball. I really like anime in the past. (D)
1:25- 2:55	OK so what has changed in the past decade, is the rise of Netflix and internet stuff. The TV program becoming more and more boring I think. Because most of the fun it cost a lot of money and normal TV station don't want to put much money and effort on that. And Netflix has better stuff…(A)
3:00-4:00	I'm not sure TV program changes in the last decades. I can feel some change in Japanese TV program. That is the cost, amount of money provided to make program. That money goes to Netflix, this kind of online TV program. In the two decades at least, Japanese TV couldn't invest much money. Maybe that could leave…(D)
4:24-5:45	Ah…E to…terebi wo mimasu ooi desu. Ima,…daitai hito wa internet to de bangumi mimasu. (B)

6:13-7:13	Ah…watashi wa Wagga-san to onaji desu. Watashitachi wa itsumo terebi de mimashita, demo ima chotto benri…ah…uh…wa can watch movie from, …ah… internet to de TV no bangumi mimasu. (C)
7:18- 7:42	Uhm…I'm not quite sure that change my life directly but maybe I think I do get the influence from TV, I guess, don't know it actually gonna change the way of my life. But I sometimes feel like when watching TV, there something come out but you don't say it's gonna change my life, I think…(A)
8:47- 9:47	Watashi mo chenji ga wakarimasen desuketo benkyo ga zettai arimasu. (B)
10:30- 10:51	I'm also not sure whether TV changed my life or not. Of course TV changes has some influence on me. Not sure changed my life. There were some influence on me. For example the Dragon Balls teach me justice, and (..) give me much fun time…anyway I'm not sure it changed my life.
talk	watashi benkyo wa daitai America no dorama kara benkyoshimasu. ….

2:27- 3:48	I think a waste of time is …. (A)
4:09- 6:45	A no, donna terebi bangumi wa jikan wo kakarimashita? Mondai wa? A no,story bangumi wa ichiban jikan wo kakaru to omoimashita. Tatoewa, maishuu go go roku kara hachi ji made, bangumi ga arimasu kara, ano shigoto wo owarimashita kara, ano ie e kaeritai, demo ….ano…betsuni youji ga shimasen kara, …(B)
6:57- 9:34	donna bangumi ga amari jikan kakari wa …(C)
10:52- 14:01	I think…(long thinking time) I don't like TV …sorry (D)
talk	discussion
16:06- 16:23	I don't watch TV because I don't have TV in my room, just newspaper.(A)
talk	asking…
1:19- 2:58	watashi wa ima, ah mukashi wa terebi wo mimasen deshita, demo watashi wa kyonen yon gatsu kara nihongo de jimu wo miru ga arimasu. Demo chotto muzukashi desu ne, nihongo bangumi, ano

	daitai wa nihongo no news wo mimasu, hai, ano ichinichi, tapun ichi ji gurai, ni ji gurai. Hai, izo desu. (B)
3:16- 4:18	I don't watch TV but recently I watch TV, I only watch TV for…(keep repeating nonsense)
4:50- 5:40	watashi mo terebi amari mitenai. Kazouku to isshoni mimasu, gonen kan mae gurai, izzo desu
talk	discussion,
11:15- 12:54	My favorite TV program …uhm nowadays I'm interested in love stories. First of all I like reading books, nowadays some TV programs are delivered in the form of story…(A)
13:07- 15:36	Nanno terebi bangumi wa daisuki desu ka. Ano kokose no toki ni yakyu game wa daisuki desu, america yakyu game daisuki, demo jikan wa tapun wa gozen nana ji kara juu ji han made, kono jikan wa ano gakko e iku jikan desu, demo watashi wa daisuki no theme game ga aru toki gakko e ikimasen deshita. Demo yakyu no miru jikan tapun wa san ji han gurai, mukashi no jikan wa arimashita, demo ima wa nagai jikan ga arimasen, chotto jikan aru, tatoewa ichi ji, ni ji…saikin wa game highlight wo mimashita. (B)
15:48-17:55	

	Nanno terebi bangumi ga suki desuka. Watashi wa terebi, kankoku no dorama ga suki desu. Demo love story dake, sonota dorama ga amari suki janai desu. Watashi wa ii story no dorama ga suki de, tatoewa, dorama de aru…(C)
2:01- 2:45 talk	My favorite TV program is..because its great effect…I like cute…(D)
8:57- 10:07	discussion In my hometown, my house has TV and everyone like to watch TV but my parents didn't let me watch TV too much. Because I focus to see TV without eating food…(A)
10:46-12:40 talk	Kodomo no toki ano ryoushin wa terebi wo mite ikimasen, demo ryoushin wa itekimasu, terebi wo mimasu. Soshite, demo watashi wa oni ga imasu, ano onna no hito to otoko hito no bangumi no suki jigai imasu. Oni no bangumi wa watshi wa kirai, ryoushin itekimasu no jikan wa chisai kara demo, futari no jikan han, hai, totemo chisai…(B)
14:10- 15:57	the speaker mistake about sister and brother (ane and oni) and they fixed it for him…

16:26- 18:50	Kodomo no toki wa kibishi no kazouku de benkyo wa ichiban taisetsu de terebi wa chotto dake, shukujitsu toka nichiyoubi gurai dake mimashita. Sono toki ichiban suki wa nichiyoubi wa wa tashi wa Christian node, mainichiyoubi wa kyoukai e ikimasu, asa hayaku okite, watashi to ane to imoto to issho suki no takusan mimashita. Hai izo desu.
2:55- 4:25	I watched TV when I was a child. I watched TV at dinner time…I haven't watched TV for a long time. My little sister and brother don't watch TV…
4:35- 6:05	When I was a child, I watched Doraemon, Dragon Balls. At that time, Japanese channel number 3 was for children…
6:10- 7:28	Kodomo toki wa zembu anime. Demo kosomo toki wa anime daisuki desu demo ima wa anime wa zettai, ano amari suki janai. Tapun wa kodomo toki ni tomodachi itsumo mite, issho ni gakko ni sonna no story hanashite, ima wa nai desu.
7:34- 9:01	Chisai no toki ni tapun anime ya America no dorama wo mimasu. America no dorama wa tokitoki ego de hanashite, sonotoki de eigo wo benkyo shimasu. Sono terebi kara eigo wo benkyoshimashita. Ano terebi bangumi wa tabun okasan, chichi wa news ga suki, tokitoki chichi miru toki, watashi wa mimasu.

talk 13:03-14:43 15:09-17:37 0:48- 4:06 4:18- 5:50 9:18- 10:53	When I was a child, I watched animation. My family watched together. discussion I might say yes…(need to check the sound again, too small to hear) watashi no kotae wa batsu(x). Terebi wa itsumo terebi, ima no sekai no joho wa juu nen mae yoro ooki narimashita, soshite terebi dake, ano terebi wo joho wo okurimashita no hoho wa ano dame, dame janai, ano enough janai. Soshite iroiro na hoho wa tekimasu, tatoewa, ketai, internet, social networl, ano watashi no iken wa mono, mono no aita ni software hoho wa kawateimasu (change). Izo desu Terebi bangumi wa mae to ima no wa onaji janai. Ima mukashi mono wa takusan ii joho wa terebi de moraimashita. Demo saikin terebi bangumi ga amari ii to imasu. I also say yes to this question. I think the effect of media is getting bigger in internet. TV is becoming… Yes, I think TV does change my life. When I was a child, I cant read books because I don't know Japanese characters. I just understand Hiragana and katakana. So when I was a chilad I can understand by

11:13- 13:11	TV, very important to know the news. Now it has no use for me because I can read kanji now…
13:21- 14:51	Taiwan de ni nen yi kai senkyo ga arimase. Mukashi terebi de sefu no joho kara moraimashita. Sonna toki ni jibun no iken ga terebi kara eikyo wo ukerimashita. Demo sonna no iyu te, watashi no seigatsu wa terebi de kawarimashita. Ima wa nihongo wo benkyo shitai kara, terebi de shimpun no mimashita, daitai wa ima wa seigatsu mo kawarimashita. Hai izo desu.
14:56- 16.26	terebi bangumi ga watashi no seigatsu soro kawari koto ga arimasu. Tatoewa, animation wa nihon no ichiban yume desu ne. terebi de iroro na animation ga ate, hokano kuni wa technology mo wakari yasui to omoimase. Demo ima no saikin wa terebi wo minai desu. Tabun watashi no seigatsu ima wa amari kawarimasen.
talk	I would like to answer this question. My life also change because of TV. There are many topics on TV. TV is very common nowadays…(thinking time)
	discussion

1:44- 4:13	Which TV program is a waste of time? I think … I'm not…I think …difficult…maybe love stories is waste of time TV program. Because I don't watch love stories. I watch only…love stories…um…Sorry I can't explain the reson but maybe I think love stories is a waste of time.
talk	discussion
7:37- 8:39	I think horror TV program is waste of time. The reason is so simple. I hate scary things. So I don't like ghost and something dark and midnight. I couldn't watch horror TV program. So it is a waste of time.
talk	discussion (The foreign student got difficult in explaining in Japanese and ask for other members's help. He explained his reason in English first. The others wrote answer in the chat window)
12:56- 13:08	watashi wa horror no terebi bangumi ga jikan no muda to omoimasu.
talk	discussion
16:00- 17:02	

	I usually watch TV once or twice in a week. I usually watch Youtube or some videos or I don't watch TV so much. So I watch TV once or twice a week.
talk	
	discussion (maybe youtube or Netflix is considered as TV program?)
6:34- 7:54	
	You know I don't often watch TV but last month I was in India for exchange program. In India I sometimes watch TV programs, comedy. I feel exciting, comedy is online in India. I watched twice or three times in a week.
talk	
	discussion
9:51- 10:06	
	Comedy wa watashi no suki no bangumi desu.
talk	
	discussion
15:14- 17:40	
	My favorite TV program is documentary or travelling TV program called ..(in Japanese name). There are some travellers, they are crazy. Someone goes to North Pole…There are some crazy journey documentary every month. It is exciting…
talk	
	discussion

7:00- 7:48 talk 14:26- 15:15 talk 2:39-2:53 talk 15:28- 17:24 0:42- 2:07	Terebi no bangumi…Watashi wa sport program ga ichiban suki desu. discussion Watashi ga daisuki na bangumi wa tokuni discovery toka, sport bangumi…soocer no bangumi wa yoku mimasu. Tokuni igrisu no soocer ga suki desu. Hai izo desu. discussion (They asked more questions) Watashi wa terebi ga mimasen deshita. long discussion The large TV company is NHK. They have two kinds of streams. First is mainstream in TV, second is interact, education…It is TV program for children, about history…educational TV program…I watch this second stream in childhood sometimes. Maybe it changed my life Watashi chisai no toki wa terebi wo mitara, yoku…tatoewa, eigo wo benkyosuru no toki, yoku BBC news toka wo mimasu. Sono

3:42- 4:52 talk	…Watashi daigaku kara hajime nihongo benkyosuru no toki wo, yoku TV wo mimasu… I am affected by anime, made by NHK. It called …(Jap name). It's anime name. In their world, VR technology is very popular so there are many interesting things. I want to carry that technology to game so I research here. So my life is changed by that TV program. discussion. They cannot finish all the questions listed in the topic by the designated time.

Not-using BiTak Groups

0:22-2.11	What kind of TV program is a waste of time?...wase of time is a strong statement for TV program.
disrupt	not clear utterance, talk at the same time, not clear turn. Ex: amari mimasen, I don't watch TV, there's no TV in my room.
4.10-4.25	Yes I always watch TV
4.27-4.29	TV arimasuka?

talk	cannot estimate turn cuz they speak the same time. Consider discussion. Did you watch TV when you were a child? Arimasu/Yes. (two pp answer at the same time) what program did you like? Anime, Watashi no childhood wa Pokemon, Doraemon. Is it famous in your country? Doraemon, I know. News wo mimasu ka? I don't like news. Watashi mo onaji. …I like animation.

	WWE mimasuka? WWE? Fighter?Yeah I know. Nihonjin no … Wakarimasen. America no program? Yeah I know. I like it. Watashi wa maigatsu mimasu. You mean Every month? It's maitsuki. Kana-san mo nani wo mimasu ka?
9:00- 9:50	When I was an elementary student, I like to watch quiz show, very easy quizshow for elementary student. I also like watching anime or drama because those kinds of thing I can make every single story… Youtube? I like Me too. Watashi mo suki.

	Watashi wa indo no channel ga suki. (start speak in English). Watashi wa ryori channel yoku mimasu. Can you cook? Japanese food? Myanmar food? Hai. Oishikunai to omoimasu. I like music videos. Un Watashi mo ongaku suki desu yo. Me too. youtube de…(people cannot understand. They keep aksing what??) (lots of out of topic questions, chaos, not focus on main point..) (One member even opened the music to show others the music he liked.) (They kept talking and gossiping about their music taste, gradually forget the questions they have to answer)

	(The gossip time last too long, no longer serious in the questions provided) (the experiment time was ended without finishing the topic questions).

1:56- 2:12	watashi wa hitori de no jikan ga suki desu.
2:37- 2:47	watashi wa hitori de amari suki janai.
3:01- 3:20	I like to be alone. However, sometimes I feel a little bit lonely so I try to communicate with s.o else but mostly I like to be alone, playing games…
3:29- 3:53	Um…Yes mostly I like to be alone. The reason is when I am alone I can concentrate on myself without being interrupted with other pp but I also like to be with friends but sometimes I feel tired even with that type of pp.

	How can I say I sometimes want to be alone in Japanese?....(type to explain) any more question?...
5:41- 6:03	OK, when I am alone, I like to watch youtube, play games, listen to music. That's all.
6:15 – 6:40	hitori no toki de america no dorama ga miru koto to koto ga kangai iru.
7:13 – 8:08	Actually I'm the same with you guys. When I'm alone, I watch youtube and American TV series. But…how to say… but I like watching to some youtube program that I cannot watch with my friends for example some kinds of motivational videos, it's embarrassing. Yes, that's all.
8:39 – 8:56	Watashi wa hitori no toki gemu wo asobu to America no dorama o mimasu.
talk	Do you guys have Netflix or sth? …I have…I share with my friends. Any comments?...Ok next one..
1:13 – 12:02	

12:43- 13:27	Yes, I like to stay alone but if I stay alone too long, I get lonely so sometimes I spend time with my friends. Do some rubbish stuff like playing games, talking about job hunting…
13:56- 15:11	watashi wa futari/futatsu mo suki desu. Tokitoki tomodachi to chatto ga suki desu. Asobi to tomodachi to suki desu. Eh..tokitoki jibun de suki desu.
15:28- 15:53	Yes I like staying at home but I also want to say I like spending time with friends. The reason is sometimes unexpected things happens when I'm with my friends. For example, yesterday, I talked all night with my Chinese friend, gossiping about one professor. Yes it was fun. And then we said bye bye and I prepared to go home, and in the corner, that professor was there, and heard all we were talking. That was terrible but it was fun.
talk	watashi wa tomodachi to no jikan wa suki desu. Tatoewa, ie ni hitori de onrai gemu de tomodachi to isshoni asobimasu.
3:01- 3:14	what kind of online do you play? Usually…(name)…
3:52- 4:16	saigo no hitori de wa ko no asa desu.
4:25- 4:45	the last time I was alone was this morning until 8:15 or …I guess

4:58- 5:13	Yes, the same, last time was this morning maybe. And that time was finished by my professor in my lab. I was doing my report whole night…to finish my report.
talk	watashi wa saigo no hitoride no jikan wa kesa desu…this morning.
7:07- 7:22	okay let's move on to the next question about teamwork.
8:14- 8:58	eh saigo ni team de shigoto no wa ima desu. Jiken no team shigoto desu. Apart from the experiment this time, my last time work in team was last year December, I think, we discussed about the topic and did presentation in front of class.