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Citation	. HCI, , 2016-HCI-167(16): 1-8
Issue Date	2016-03-01
Type	Journal Article
Text version	publisher
URL	http://hdl.handle.net/10119/13775
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Description	

Strict Turn-Taking in A Half-duplex Dual-lingual Video Chat : An Unfriendly User Interaction But Useful In Enhancing Second Language Speaking

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Abstract: In this paper, we propose a video chat system named BiTak which employs strict turn-taking dual-lingual communication using recording function. BiTak aims to motivate the dual-lingual conversation between Japanese and International students as well as to identify the mutual benefits through this kind of conversation for the need of improving simultaneous bilingual acquisition. The two most outstanding 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. We conducted experiments to evaluate the effectiveness of BiTak and found that dual-lingual communication brings about the sense of language learning while strict turn-taking function favorably and recording function boost students' speaking skills. It is recommended to integrate all of three characteristics for achieving best results in practicing second language speaking skill.

Keywords: Strict Turn-taking, Dual-lingual Communication, Simultaneous Language Acquisition

1. Introduction

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. However, it is not always easy to get an opportunity of speaking with native speakers face-to-face. Hence, this paper suggests a virtual environment for students to freely practice second languages with supporting elements. Specifically, this study proposes a video chat system named "BiTak" to facilitate strict turn-taking dual-lingual communication for language speaking practice. The system is equipped with a recording function that can discretely record each utterance of all speakers and strictly asks users to take turn to talk.

2. Background

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. (2012) 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

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languages.

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. According to Landis. Dan, and Richard W. Brislin (2013), the primary reason for this is "the widespread use of traditional grammar-translation method of English language teaching 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. Besides, according to Galloway, N. (2013), there are several factors influence Japanese students' attitudes in learning English such as pedagogical beliefs, stereotypes, future goals and motivation. On the other hand, Seward, J. (1969) asserts that foreigners also 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.

These language barriers prevent people from communicating directly (Holman et al., 2011). 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. 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. (2014) recommends providing more opportunities for *interactions* between Japanese and internationals to satisfy both.

Being inspired by that recommendation, our study suggests building an online environment for both Japanese and internationals to talk freely using both English and Japanese. We propose a video chat system named BiTak that employs strict turn-taking dual-lingual communication using Recording function.

Dual-Lingual Communication

The concept of Dual-lingual Communication in this research is defined as two languages being spoken in the conversation and understood by respective participating parties. Namely, 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 (2006) defines bi-/multilingual as "the ability to use two or more languages to sufficiently carry on a limited casual conversation".

Using more than one language in a conversation is popular. This kind of communication has become effective for the sake of deeply understanding interlocutors. In Japan, there is a popular free English and Japanese news podcast called Bilingual News[1]. This program offers casual and unedited colloquial language learning experience through a weekly review of relevant news topics. 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. (2012), 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 (1991) 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.

These are the reasons why we 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 other 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.

Strict Turn-taking

Turn-taking is one of the fundamental mechanisms to promote and maintain talk in conversations. Coulthard (1985) 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

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1 http://www.tokyoweekender.com/2013/08/bilingual-news-podcast-storming-the-charts-in-japan/

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. 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.(2002), 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, our system would like to strictly apply the turn-taking approach by using Recording function. In our system, users are asked to entirely obey the turn-taking rule and they are not allowed to overlap or interrupt another speaker while turning on the recording button. we suppose that the unfamiliar way of strict turn-taking will bring about unexpected but possible outcomes.

The rest of this paper is organized as the followings. Section 3 reviews related works and correlates them with our proposed sys- tem. The description of our prototype system is mentioned in Section 4. Section 5 describes the experiments to estimate the proposed system as well as mentions its results. The effectiveness of the system is also discussed in Section 5 by comparing two experiment approaches, one using "strict turn-taking" with the recording button and one without using it. Section 6 concludes the paper.

3. Related Works

Online systems support cross-cultural group chat

Recent studies have suggested some implications for the design of tools that might enhance cross-cultural group chat (Li, N., & Rosson, M. B., 2012). 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)).

Ogura, K., & Nishimoto, K. developed the voice chat system named "ChaTEL" which can record the utterances for the re-listening to achieve multithreaded voice communication (2006). 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. The newly added recording function of ChaTel has inspired us 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.

Online systems support language learning

Recent researches have shown 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. 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.

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. 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). After making interviews about preference of media use of non-native speakers, Setlock, L. D., & Fussell, S. R. (2010) 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. (2014) 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 correct 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 (Chang, Y. J., Li, L., Chou, S. H., Liu, M. C., & Ruan, S. (2013)). The results of the study indicated firmly Xpress' potential in helping SL learners effectively learn colloquial expressions by their design ideas.

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. 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.

Nevertheless, few studies have aimed to utilize video chat applications for supporting simultaneous learning of multiple languages. Our 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.

4. BiTak System

We developed a web application called "BiTak" using the open source from WebRTC[8], which is a free, open project that provides browsers and mobile applications with real-time communications with simple APIs. Fig.1 shows the user interface of BiTak. 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.
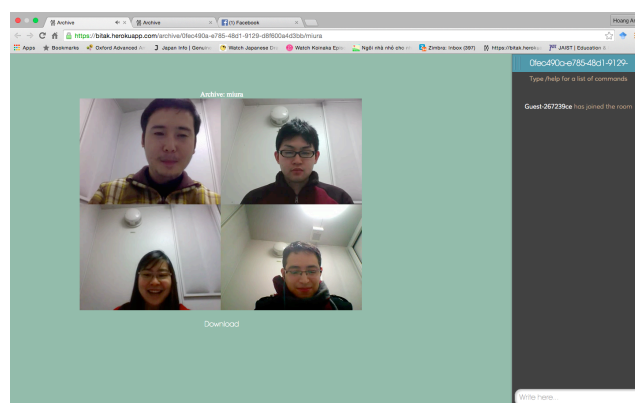

Figure 1   User Interface of BiTak

Figure 2   An example of the recording link

4.1 Strict turn-taking function by discretely recording each utterance

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, not to realize multi-threaded communication. When a person wants to talk, he/she just needs to click on the Recording button [▣] then his/her voice will be automatically recorded. At the same time, others' microphone will be off; they can do nothing but listen to the speaker. After the speaker finishes talking, he/she clicks the Recording Button again, the blue recording link will appear in the right pane of the main window chat (See Fig.1). The next person will take turn to talk by repeatedly clicking the Recording Button. Therefore, the communication style with using BiTak is in a half-duplex manner similar to that of a transceiver. The users can download all the recording videos for further reference.

4.2 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.2). Meanwhile, the main 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 all recording links. The users can chat, ask or point out 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.

5. Experiment and Discussion

5.1 Experiment Procedure

We conducted a series of 4 experiments in a group of four subjects including a Mexican student (named A-san) and a Vietnamese student (named B-san) who both speak English as a second language (same from the preliminary experiment) and two Japanese students (named C-san and D-san respectively). All subjects are familiar with some popular video chat applications like Skype or Facetime, however, the recording function with strict turn-taking approach is totally new to them. Each experiment is carried out by two stages: Stage 1 using BiTak without turning on Recording function which also means strict turn-taking is not employed either and Stage 2 using BiTak with employing Recording function and strict turn-taking approach. In each stage, the two Japanese used English while the foreigners practiced Japanese concurrently. The subjects communicated informally using some suggested topics for both stages. Each stage may last 40 minutes and they are allowed to actively talk about any new topics if the time has not been not over. However the time for stage 1 is gradually reduced through experiments in order to invest more time in exploring the BiTak's new functions.

After each experiment, we conducted a semi-structured interview with one or two randomly-chosen participants, spending approximately 30 minutes for each discussion. However, at the end of the last experiment, all of the participants were interviewed in order to achieve final results. The interview questions were guided by the general themes which aims to gain thinkings about Dual-lingual communication and Strict turn-taking with Recording function. Besides, the questions were also open-ended enough for us 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.

5.2 Results

5.2.1 Experiment 1

In the first experiment, the participants were supposed to meet the fundamental requirement: getting familiar with dual-lingual communication and strict turn-taking approach including recording function.

The suggested topics for this experiment was also kind of easy-to-communicate topics for the first met: "Self-introduction", "Talk about habits and hobbies", and "How you learn English/Japanese".

At the beginning of the experiment, all participants were generally instructed about the usage of BiTak. They all received the introduction about every feature of the video chat system. Generally, they finished two stages quite good. All the topics were completely discussed in the designated time frame. Interestingly, they eagerly followed the rule of using dual-lingual communication. However, they were still shy to express their ideas as well as using the functions of the system. The strict turn-taking mechanism was pretty well applied. Nevertheless, all participants seemed to ignore the recording link where they could listen again their talk.

"*I think because this is the first met for us, people seemed to be nervous. After our self-introduction, we felt more open to each other and talk more, the time for each turn to speak also last longer than the beginning.*" (B-san, Vietnamese)

"*I did not use English so often so I felt nervous at the beginning...I tried to follow the others so I reluctant to watch again the recording video.*" (C-san, Japanese)

"*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…*" (A-san, Mexican)

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 followed the strict turn-taking appropriately. Some even had a long talk to express their ideas better while others still felt nervous and did not intend to access the recording link.

5.2.2 Experiment 2

The topic for the second experiment was about happiness. Each member was required to express their opinion about happiness, which may make people happy, how and why , etc.

All participants became familiar with strict turn-taking. The time for stage 1 was reduced remarkably to 20 minutes as they would like to spend more time for stage 2. They took turn to talk smoothly. When one finished talking, others suggested watching the video again together. Then they started correcting mistakes by using normal conversation (without using strict turn-taking). However, the process was getting slow and the amount of words and sentenced to be corrected were also a few. In the time limit, four person had 3 turns to talk, each turn lasted from 30 seconds to 2 minutes and the utterances recorded in each turn varied from 5 to 12 utterances.

After the experiment, we randomly chose C-san and D-san for a minor interview. The first given question was about dual-lingual communication. They were asked to give their opinion about applying dual-lingual communication during the last two experiments.

"*I think it's good. I can have the feeling of study…It is not normal communication. It's good for study.*" (C-san, Japanese)

"*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…*" (D-san, Japanese)

Then they were asked about feeling when using the system:

"*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.*" (C-san, Japanese)

"*After listening again the recording videos, I even downloaded the videos…I want to watch them again after the experiment*" (D-san, Japanese)

Regarding the strict turn-taking approach:

"*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.*" (D-san, Japanese)

People already got familiar with talking face-to-face in social conversation and usually felt at ease in such kind of normal conversation. Hence, it is easy to explain why participants often forgot the Recording function in the first experiment. Nevertheless, they showed an improvement in managing this function in this experiment. One participant was aware of the function of downloading videos and he even downloaded 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. After the two first experiments, it was still difficult to conclude the Recording feature is working effectively or not because the subjects did not use this function so often.

5.2.3 Experiment 3

In the third experiment, all participants were asked to show their preference for travelling, what kinds of travelling they prefer (alone or with someone else? etc.,), where they want to go and explain the reasons. It might be because of familiarity with the system, all subjects felt confident in making their talk
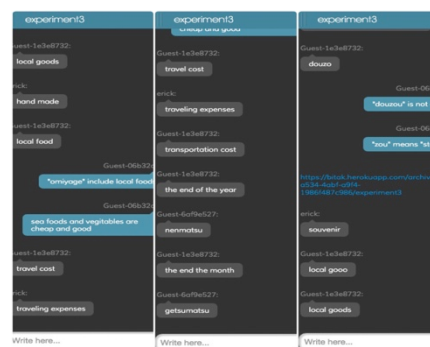

Figure 3: An example of correcting mistakes by typing in the side chat bar

longer in each turn. Each turn this time lasted from 1.5 minutes to nearly 3 minutes which contained 8 to 15 recorded utterances per turn. Two people got 4 turns to talk and the others had 3 turns. Moreover, they were getting used to Recording function and wanted to use the Recording. They were willing to listen again the recording video. Meanwhile, they even wrote the word they wanted to correct for others on the side chat bar (see Fig.3). 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.

"*I think we connect very fast. The first day with everyone 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 in 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.*" (A-san, Mexican)

As can be understood from the answer for interview of A-san, all participants became more and more active through the three 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, A-san 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.

5.2.4 Experiment 4

In the last experiment, everybody was required to review all the topics they had already discussed during the last three experiments and could have free talks if the allocated time was not over yet. The purpose was to check whether the participants were able to learn from their last mistakes to make smooth discussions.

As expected, each person quickly had his or her talk finished in each speaking turn. There were 4 turns for each person to present their ideas which all contained more than 10 utterances for a mostly 2-minute turn. Although the contents of their talks were slightly different to the last experiments, it was hard to recognize any considerable mistakes that they had made before. In addition, they even felt more open to talk about the newly-added topics chosen by themselves such as last weekend activity, which season they like best, happy time, favorite food…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.

All participants presented their answers for the last interview:

"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 …Speaking Japanese in front of Japanese people is really useful. I feel more confident in spite of my limited Japanese speaking ability." (A-san, Mexican)

"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." (B-san, Vietnamese)

"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!" (C-san, 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" (D-san, Japanese).

In general, after finishing the last experiment, all participants gave out positive feedbacks about the BiTak. Everyone used the system more and more actively throughout experiments. For two internationals, it was a great experience to practice speaking Japanese with native speakers. Two 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.

5.3 Discussion

5.3.1 Dual-lingual Communication

As can be confirmed from the series of experiments, dual-lingual communication is novel and effective in 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 face difficulty 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.

5.3.2 Strict turn-taking

The smooth turn taking system usually ensures that the flows of conversations can naturally carry on unambiguously and coherently. However, in this system, users are required to obey strict turn-taking to communicate. This mechanism 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 dual-lingual communication. The numbers of talking-turns increased throughout the experiments and the numbers of utterances in each turn also were considerably high. This also means the BiTak function plays a considerable role in supporting users conveying their ideas or practicing second language. On the other hand, while using BiTak, users can also flexibly change into normal conversation mode whenever they want to quickly exchange ideas.

5.3.3 Recording function

The purpose of creating Recording 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. Nevertheless, it is hard to conclude its usefulness in such a short-term test. And as estimated, the recording function regained 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. However, 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.

6. Discussion

In this paper, we proposed a video chat system named "BiTak" to facilitate strict turn-taking dual-lingual communication for language speaking practice. BiTak is equipped with a recording function that can record all speakers' utterances and strictly asks users to take turn to talk. Based on the experiments, it was suggested that all of the three proposed functions proved their efficiency in supporting language learning. From analyzing collected results, it is suggested to incorporate all the three features to achieve best outcomes 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.

Due to limitation of time and effort, we recognize that our observations come from a relatively small number of subjects. It is not appropriate to apply quantitative analyses for small samples such as this. A more extensive study would be needed for proving the solid efficiency of all characteristics we have mentioned.

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