Using Videoconferencing Software in Learner-centered Communication Instruction: Does Raising Consciousness Promote Learning?

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In this study, we investigate the effects of raising the consciousness of learning objectives in learner-centered videoconferencing. The aim of this study is to determine the issues in using videoconferencing system for oral communication improvement in learning a foreign language (Experiment 1) and to evaluate whether consciousness of learning objectives leads to action based on that consciousness (Experiment 2). We implemented a system to raise learners' consciousness of learning objectives in second language acquisition (SLA) by displaying the target expression during videoconferencing, to encourage learners to utter the expression. The effect of this system was evaluated compared with a video conference system without expression display from the viewpoints of consciousness and action. The results showed a significant difference between the system with expression display and the system without expression display in both consciousness and action. However, the result also revealed that attention to system design and instructional design will be needed for more frequent action in videoconferencing.

Key words : CALL, CMC, Multimedia, Communication skills, Consciousness raising

1. INTROUCTION

1.1. Technological background

As information technology advances, interest has grown in using computer networks for second language acquisition (SLA). Recently, network technology such as Computer-Mediated Communication (CMC) allows teachers to offer Internet-based collaborative learning in SLA. It has been suggested that, in particular, synchronous CMC is effective in instruction of communication skills, because synchronous CMC such as text chatting in SLA can offer an environment similar to face-to-face communication (Blake 2000). Much previous research has reported a positive effect for language learning. CMC and other interactive media can be used for promoting learning (Warschauer 1997). Synchronous CMC promotes more equal participation than face-to-face communication in discussions in a second language (Chun 1994; Warschauer 1996). These positive effects promote the interaction between learners, which many researchers regard as one of the most important skills in communication (e.g. Long 1981, 1989; Gass at el, 1989).

Broadband network is capable of offering a new type of CMC using multimedia, audio-conferencing and videoconferencing. Several studies have suggested the effects of such kinds of CMC in language learning. Videoconferencing allows learners to eliminate physical barriers and motivates them to speak in the second language (McAndrew *et al*, 1996). Videoconferencing has learners use communication devices such as eye-gazing and gestures for understanding each other (Bruce 1996). In task-based language learning, videoconferencing can improve performance in collaborative learning (Zähner *et al*, 2000).

However, it has also been pointed out that practical use of IT-enhanced CMC in SLA has not yet been considered (Wang 2004). For example, learners may be required to install particular videoconferencing software, and such software may not be function correctly in some operating environment.

In addition, instructional design must take into account the features of IT-enhanced CMC for a videoconferencing system to be used effectively in SLA, it seems to be necessary to implement not only a method to communicate using image and voice, but also functions to support the accomplishment of learning objectives.

1.2. Theoretical background

From the view of SLA, as mentioned above,

previous work suggests that CMC is effective in communicative language learning, because CMC can promote interaction such as negotiation of meaning between learners, comprehensive input and output. Interaction, comprehensive input and output seem to play an important role in language learning. The importance of these factors in classroom-based communicative instruction has been verified by many previous studies.

Comprehensive input means written or spoken information in the target language which the learner can comprehend (e.g., Krashen 1985; Gass et al, 1998). Interaction is based on comprehensive input. In SLA, communication skills, in particular, seem to be learned through communication between participants such as learners and teachers (e.g., Long 1981, 1989).

Interaction refers to meaningful communication to enable understanding, and drives comprehensive input. For example, when a learner cannot understand his/her interlocutor's utterance, his/her interlocutor tries to modify or paraphrase for the learner's understanding. In another case, a learner can ask his/her interlocutor to repeat. Learners seem to learn communication skills through the production of comprehensive input in interaction.

Output means learning activity in language education. Learners need to perform learning activities such as uttering, repeating or writing, because learners produce comprehensive input through interaction (Swain 1985, 1995). Swain (1995) claimed that output has three functions: noticing the gap between what the learner can and cannot express, hypothesis testing such as the trial-and-error method, and metalinguistic functions such as reflective learning.

A communicative approach is effective in fostering communication skills by combining with three rationales above. However, in an interactive classroom setting, it is difficult to make learners aware of the learning objectives consciously. In general, learning objectives are not described clearly in communicative task-based instruction, because evaluation criteria are concerned with task accomplishment and outcome of communication, not fluency and accurate form of learners' utterances (Ellis 2003).

1.3. Instructional background

Japan has traditionally focused on grammatical competence in language learning. However, with internationalization, we face the possibility of having to speak English anywhere, anytime, even in Japan. Thus, recently, the focus of instruction was shifted from English as sophistication to English as a communication tool, and the development of practical communication skills has been clarified as the goal of English education in the official curriculum guideline of Japan (Ministry of Education, Culture, Science, Science and Technology, 2004). But teachers need much time to teach communication skills, which consists of many basics which learners, in particular beginners, have to master.

Ideally, teachers would teach both fundamental and high level skills in every face-to-face lecture. However, this ideal is difficult to achieve, because the lecture time is so short that they may not be able to accomplish the learning objectives which they set. Therefore, one effective solution would be the use of CMC; blended learning with CMC and face-to-face lectures would be practical and effective for second language learning.

In such blended learning, online learner-centered study is often offered, with the intent of motivating learners to study and review independently. It has been suggested that learner-centered instruction may promote negotiation of meaning and increase motivation in language learning (e.g. Pica and Doughty 1985; Fernandez-Garcia and Martinez-Arbelaiz, 2002). However, there are concerns that learners do not study accurate speech in such communication. Because learners are not conscious of learning objectives, that is, they don't understand what they have to learn and what they have to do in learner-centered instruction without teacher or instruction. Discourse in teacher-fronted instruction is more grammatical than that in learner-centered study (Pica and Doughty, 1985). It seems to be important to design instruction which raises consciousness of learning objectives and retain high motivation without having the teacher in front of the learner.

1.4. The design and objectives of this study

This study consists of two parts. First, in experiment 1, we develop web-based videoconferencing software which allows learners to be conscious of their SLA objectives through learning activities in learner-centered instruction, and investigate the issues surrounding the application of videoconferencing software to SLA. Then, in experiment 2, we redesign the software, taking into consideration the suggestions from experiment 1, and evaluate the effect of the display of a learning objective as a way of raising

consciousness of those objectives, compared with the system without a display, from the viewpoints of consciousness of learning objectives and action motivated by that consciousness in learner-centered instruction.

2. EXPERIMENT 1

2.1. System development
2.1.1. System concept

In SLA research, one common topic is how to raise learners' consciousness of target language forms in communication tasks. As mentioned above, previous research has suggested the effectiveness of grammar consciousness-raising tasks in communicatin. The significance of these studies was based on the importance of learners' awareness in communicative instruction. Some studies report that learners cannot learn learning objectives without consciousness of these objectives in second language learning (Schmidt 1990, 2001). Existing videoconferencing software which transmits the interlocutor's image and voice seemed to have difficulty in promoting learners' consciousness of learning objective in learner-centered communication, because such software did not display the learning objective and context for communication. Therefore, in learner-centered communication, we considered the necessity to (1) give context for communication and (2) display learning objective at all times in order to raise learners' consciousness. To this end, the system required the ability to display learning objectives and to display and manage learning material.

For this experiment, we developed a software system that will allow learners to be aware of and utter the target formulaic speech as a learning objective. Formulaic speech is an expression that consists of fixed and repeated words and is employed on particular situations. We chose the acquisition of formulaic speech as the learning objective because formulaic speech acquisition is employed commonly and accepted by learners of a wide range age in the early stages of SLA (Ellis 1986). The system allows learners to initially select a target expression from several formulaic speech patterns which the teacher has set and display it during videoconferencing. We assumed that learners use the target expression as a learning objective in communication while watching the learning objective display.

2.1.2. System architecture

This system is a client/server system. Clients consist of a camera, headset with microphone, and software allowing selection of expressions, display of target expressions and learning material, and videoconferencing. All client software was developed in Macromedia® Flash™ and Action Script, and can be used on web browsers with the Flash™ Player plug-in 7.0 or later installed. If the Flash™ Player plug-in is not installed, or if the installed version is too old, most web browser software currently in common use (including Microsoft® Internet Explorer™ ,Netscape™ and Mozilla Firefox and the like) will allow the user to download and install the plug-in automatically. The server side consists of software for management of learning material, management of target expressions, storing learners' selected expressions, and video streaming. The first three functions are implemented in Perl and use the Apache 2.0 web server with the "mod_perl" module; the last function, video streaming function uses the Macromedia® Flash™ Communication Server MX 1.5 streaming server. All of the server software runs on the same computer.

2.1.3. System functions

In this system, videoconferencing software with learning material, learners use cameras and headsets with microphones to work together in real-time. First, the client software reads in the target expression file, which contains target expression categories and individual target expressions, from the server and displays them. Learners then select the target expression which they want to practice in videoconferencing. After selection, the selected target expressions are sent to the server, which stores them in a text file and send either a "success" or "error" response to the client. Upon receiving a "success" response, the display on the client then moves to the videoconferencing section. This section includes a target expression display to help learners be conscious of the target expression and learning material for collaborative activity. In videoconferencing, the server distributes learners' video and audio to each learner using streaming at 300 kbps; it also provides learning material documents and target expressions via the web server, which the clients read in and display. The management functions on the server allow the teacher to easily register and edit expression categories and individual target expressions as well as links to learning material documents. This data is stored in XML files. The system reads this data in at the beginning of each section, as mentioned above.

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2.1.4. Interface

The client interface consists of the target expression selection section and videoconferencing section. In the target expression section, the system displays the categories of expression; after selection, expressions in the category are displayed with the meaning of each expression. In the videoconferencing section, the system shows the target expression, video from each client and learning material. As our previous study suggested, a great deal of thought should be given to the area of target expression display for consciousness-raising. Figure 1 shows the interface of each section.

2.2. Evaluation

2.2.1. Subjects

The subjects in this study were 9 graduate students. All subjects were volunteers and non-native speakers and had the need to speak English in outside situations. They belonged to these majors; International Relation 1, Mathematics 1, Human Science 6, Information Technology 1. The subjects know each other as they have taken classes together in the past. The subjects' proficiency in English varied from intermediate level students who had participated in some international conferences to low level students who needed help to understand others' utterances. But all had reached at least a high school standard level in grammar and vocabulary. The subjects spoke English in everyday life with varying frequencies. Computer literacy among them was high. All used computers every day for e-mail, Internet, writing reports, programming, and the like.

2.2.2. Procedure

Subjects were randomly divided into 3 groups of 3 people. Each member participated in the videoconference from a different room over a LAN. First, the role (presenter and audience) of each member was decided in each group. Then, the system was explained to each member and members were asked to talk in Japanese for 10 minutes with the goal of getting used to videoconferencing. Next, members were asked to select target expressions concerning the task, and to use the system to discuss the topic.

2.2.3. Data collection

The aim of this study is to investigate the richness of function and the contribution of each function to reaching learners' objectives. Data for these points was collected by a questionnaire. The questionnaire asked all subjects to evaluate richness of feature, and consciousness of learning objective during videoconferencing, and usability from a 5-point rating scale. The questions asked to subjects were as follows:

1: Richness of feature

1-1: Rate the perceived effectiveness of being able to choose target expressions before videoconferencing (1: bad – 5: good).

1-2: Rate the perceived effectiveness of having a shared presentation document synchronized among learners (1:bad – 5:good).

1-3: Rate the perceived effectiveness of displaying the learner's selected expression during videoconferencing (1:bad – 5:good).

1-4: Rate the perceived effectiveness of being able to see other participants (1:bad – 5:good).

1-5: Rate the perceived effectiveness of

Fig. 1. System Interface (Left-Target Expression Section; Right-Video-conferencing Section)

communicating by voice and video in real-time (1:bad - 5:good).

1-6: Rate the perceived effectiveness of task-based learning (1: bad - 5:good).

1-7: Rate the perceived effectiveness of the audience being able to go back to check the document and being able to proceed until the presenter does (1: bad - 5: good).

2: Consciousness of objectives while videoconferencing and usability of system

2-1: Rate the perceived easiness of participating in videoconferencing compared with face-to-face communication (1: bad - 5:good).

2-2: Rate the perceived easiness of participating videoconferencing compared with text-chatting (1: bad - 5:good).

2-3: Rate the perceived awareness of grammar accuracy in speaking (1:bad - 5:good).

2-4: Rate the perceived feeling about seeing other participants (1: uncomfortable - 5: don't care).

2-5: Rate the perceived awareness of uttering target expression (1: not at all - 5:very much)

2-6: Rate the perceived awareness of gaze from participants (1: not at all - 5:very much).

Finally, all subjects were asked for opinions and suggestions regarding the system. Although this system was able to gather the control log, subjective data was used for the analysis, because the purpose of this experiment was to investigate the perceived effectiveness of each function and interface, as we mentioned above.

2.3. Results
2.3.1. Richness of function

The result of each question in the questionnaire was calculated as the mean value of the 5-point scale answers. Figure 2 shows the mean score of the effectiveness of each function. Each function was rated highly with mean a value of more than 3.78 points. In particular, 2 items, Q1-3 and Q1-4 were highly rated. However, Q1-6 and Q1-7 did not reach 4 points.

2.3.2. Consciousness of learning objectives during videoconferencing

The results of these questions were also calculated as the mean value of the response on a 5-point scale. Overall, the perceive awareness and usability were not highly rated. Figure 3 shows the results of the perceived awareness and usability questions. In particular, Q2-1, Q2-3 and Q2-5 received low scores.

2.4. Discussion

As for functions, the subjects expressed satisfaction with the richness of function. This result implies that CMC allows learners to work together willingly, as in past research.

However, learners did not retain awareness of their objectives during videoconferencing, though choosing target expressions and displaying the target expressions on the screen were recognized as effective. Some possible explanations are:

1: It is possible that the interface was not suitable for language learning. Learners were not aware of the objectives because attention was given instead to the participants' video when learners spoke. In face-to-face communication, learners
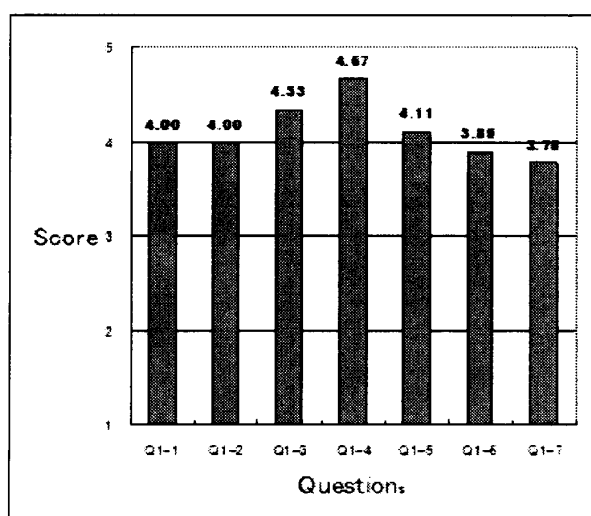

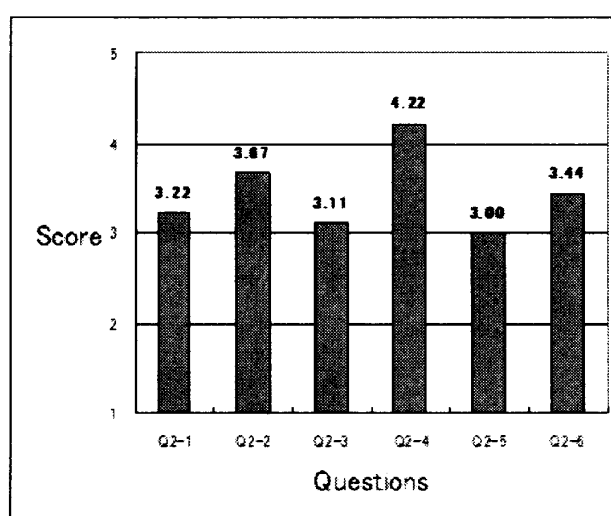Fig. 2.   Mean score of the effect of each function

Fig. 3.   Mean Score of Awareness and Expression

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speak to others' faces. In videoconferencing, the same situation was confirmed.

2: The target expressions ware not useful for communication. In experiment 1, the selected target expressions were concerned with the topic. Learners seemed to need the target expression when they triggered the interaction with their interlocutors (e.g., when questioning, or when facing trouble in communication).

3: The group size of three had an influence on the difficulty in communication. Five subjects claimed the difficulty in controlling the communication - for example, one could not speak during communication by the other two members - which led to reduced opportunities to make utterance. Furthermore, learners felt difficulty in using personal pronouns. When they said "you", their interlocutors could not understand who "you" meant. Such a communication load seemed to prevent learners from being conscious of learning objectives.

3. EXPERIMENT 2

3.1. Modification

Given the suggestions from experiment 1, three key points were revealed; interface, target expression and number of participants. We modified these points before experiment 2.

3.1.1. Interface

In experiment 1, learners were not aware of the display of learning objectives, because learners' attention was given instead to the participants' video when learners spoke. This implies the area of the display of learning objectives should gather

the concentration of eye-gazing. We redesigned the interface of the learning objectives as described in Figure 4.

3.1.2. Target expression

In experiment 1, learners were not willing to use the target expressions because the expressions were not useful in communication. Learners in experiment 1 pointed out they had not had the chance to use the target expressions. The target expressions used in the experiment were topic-related; thus, we selected new target expressions based on task design and communication strategies, which were used for the avoidance of communication trouble.

3.1.3. Number of participants

In experiment 1, it was revealed that opportunities for utterances might depend on the number of participants in videoconferencing. Groups of three seemed to have some problems, as pointed out in 2-4. Thus, a pair-collaborative task was adopted for this experiment, in order to be easy for learners to have the opportunities for utterances. This point is also shown in Figure 4.

3.2. Experiment design

The purpose of this experiment is to evaluate the effect of target expression display in videoconferencing. In order to do that, this system was evaluated compared with a system which has no target expression display. All subjects used both types of system for evaluating. However, in order to minimize the effect of the order in which the systems were used, we created two groups. The first group used the display system
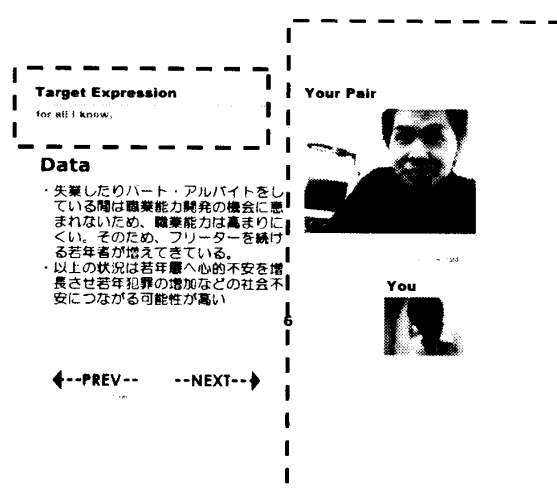
System's interface in experiment 1   System's interface in experiment 2

Fig. 4. The modification of system interface

(D-system) first, followed by the use of the system without target expression display (ND-system). We called this group the D-ND group. The second group used the systems in reverse order. We called this group the ND-D group.

Subjects participated in learner-centered discussion about serious social issues in Japan as a pair-collaborative task. Each pair consisted of subjects who had not met before, because familiarity between subjects may have an influence on communication (e.g. falling back to their native language) and evaluation (e.g. they may be affected by their friend's thinking when they evaluate the system). After the first trial in each group, all subjects changed partners; discussion themes were also changed, because opportunities to utter the target expression would decrease due to familiarity with the topic and vocabulary. Subjects participated in each discussion for 20 minutes. Each pair connected to this system from separate locations.

3.3.　Material

Tasks and topics were selected to encourage subjects to exchange opinions and ask and answer questions, in order to promote the utterance of the target expressions. Decision-making was chosen as the task by using the following topics:

1) Causes of the increase in juvenile crime in Japan and way to prevent the young from committing crime
2) Causes of and solution for child abuse by parents
3) Whether schoolchildren should have and use mobile phone or not

These topics are often broadcast by many kinds of mass media and can be seen in daily life as well; this was believed to provide subjects with the background knowledge necessary to understand those topics. Topics and their information were

Table 1.　The Differences in System between Experiment 1 and Experiment 2

	Experiment 1	Experiment 2
Number of Participants	3	2
Area of The Target Expression Display	Under the material display, bottom-left	Above the material display, upper-left to the partner's image
Target Expression	Topic-related	Task-related and Communication Strategies

distributed by learning material display in this system.

As for target expressions, we chose new target expressions depended on task design and communication strategies.

3.4.　Subjects

The subjects in this study were 24 university students (Undergraduate 15, Graduate 9). All subjects majored in science and engineering (Social engineering 5, Electronic engineering 1, Metallurgical engineering 1, Informatics 4, Human science 4, Mathematics 2, Physics 3, Astrophysics 3, High-polymer Engineering 1, Mechanical engineering 1, Civil engineering 1). Subjects did not know each other prior to the experiment. All subjects were non native speakers and had a need to speak English in outside situations. The subjects' proficiency in English varied from intermediate-high level students who had participated in some international conferences and had opportunities to talk with foreigners in their daily life to low level students who needed help to understand others' utterances, but all had reached at least high school standard level in grammar and vocabulary. Computer literacy among them was high. All used computers everyday for e-mail, text-chatting, Internet, writing reports, programming and so on.

3.5.　Procedure

Subjects were randomly divided into 2 groups, the D-ND group and the ND-D group. The experiment was conducted as described in Figure 5.

3.6.　Data collection

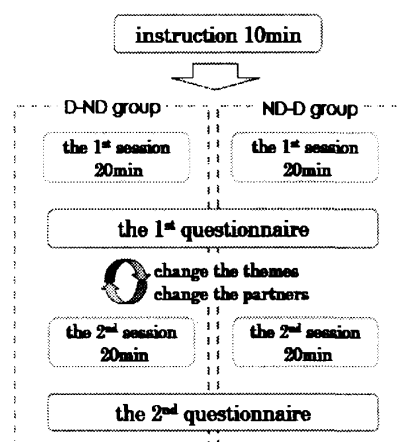The aim of this study is to investigate the

Fig. 5.　Experiment Procedure

contribution of target expression display to awareness and utterance of the target expression. Data was collected in two ways. The first is questionnaire. All subjects were required to answer a questionnaire after each trial. Questionnaires asked all subjects to rate the awareness of the target expression display and of uttering it while videoconferencing, as well as consciousness of objective, from 5-point rating scale. The following questions were asked:

1: Rate the perceived awareness of the target expression display
 (1: not at all - 5: very much)
2: Rate the perceived awareness of uttering target expression
 (1: not at all - 5: very much)
3: Rate the perceived consciousness of the learning objective
 (1: not at all - 5: very much)

The second data collection method is video-recording. In order to conduct objective research, all communication was video-recorded. Checking the selected target expression, which this system recorded, we counted the frequency of uttering the target expression and interaction between subjects.

3.7. Result
3.7.1. Awareness of target expression display and utterance, and consciousness of learning objective

A two-way analysis of variance (ANOVA) revealed that the main effect for target expression display was statistically significant in all items(1: $F(1,22)=25.229$, $p < 0.001$; 2: $F(1,22)=20.601$, $p <$

0.001; 3: $F(1,22)=6.4$, $p < 0.02$; order effect: n.s.). Figure 6 shows the significant difference between target expression display and no target expression display concerning the consciousness.

3.7.2. Frequency of uttering the target expression

Target expression display raised the learners' awareness of the target expression and learning objective. Furthermore, target expression display allowed learners to utter the target expression more frequently than with no target expression display. A two-way ANOVA showed that the main effect for target expression display was statistically significant ($F(1,22)=31.607$, $p < 0.001$; order effect: n.s.). Figure 7 shows the significant effect of target expression display on frequency of utterance.

3.7.3. Opinions and suggestions from subjects

Some subjects commented on videoconferencing and choosing target expression, and other functions. Some opinions confirmed positive effects of this system. Positive comments from many subjects included the following:

Comment 1: I felt it easier to communicate in a network-based environment than in face-to-face communication.
Comment 2: I felt it more natural to communicate using videoconferencing than text-chatting, because videoconferencing is similar to a real environment.
Comment 3: I felt it easier to make and say my opinion thanks to the integration between videoconferencing and material.

However, not all subjects regarded this system as effective in studying oral communication in
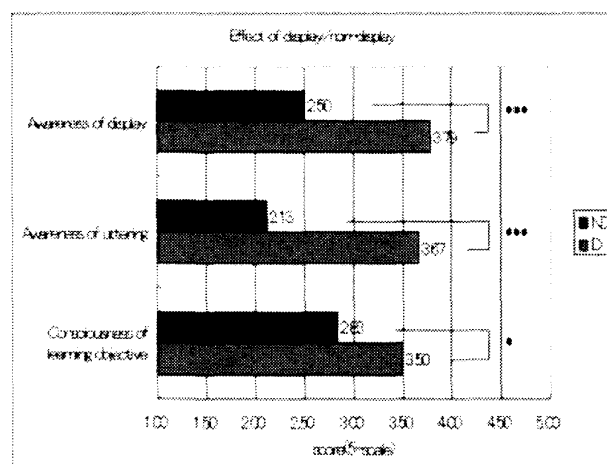

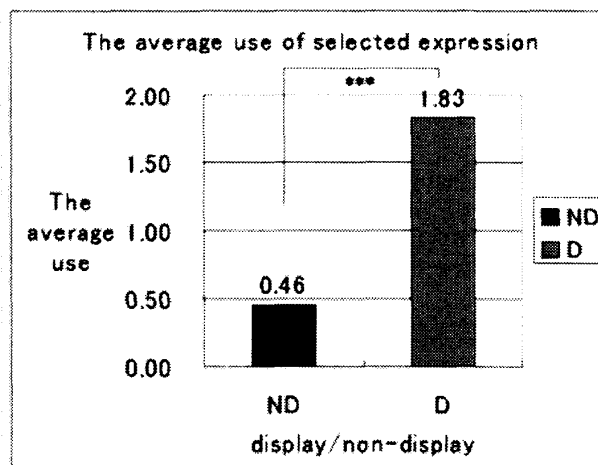Fig. 6.   Mean Score of Awareness in Videoconferencing

Fig. 7.   Mean Score of Utterances of Target

English. Some subjects felt a distance in communication compared with face-to-face communication and pointed out problems caused by technical troubles and other issues. Problems pointed out by many subjects are included:

Comment 1: I was bothered in communicating, because of looking away. When we talked, we looked at each other's video, not the camera.

Comment 2: Voice quality was sometimes bad. It prevented us from understanding each other.

Comment 3: I want to select the target expression during communication. It may be difficult to select the target expression before videoconferencing, because whether we utter the target expression depends on what we talk about. Expression

3.7.4. Feature of learning using this system

The system developed in this study assists communicative learning while uttering target expressions, which learners selected as learning objectives. We hypothesized that learners cannot often understand each other's utterance in learner-centered communication. Such difficulty for continuous communication offers frequent opportunities for the negotiation of meaning,

Table 2. The result of Experiment 2

	Non-display	Display	Significance
Awareness of Display	2.50	3.79	***
Awareness of Uttering	2.13	3.57	***
Consciousness of Learning Objective	2.83	3.50	*
Frequency of Utterance	0.46	1.83	***

***: $p < 0.001$, *: $p < 0.05$
F statistic: see results (3.7.1. and 3.7.2. above)

which is the resolution of difficulties in communication. In particular, this system helps learners to use the target expressions in the negotiation of meaning for understanding each other. For example:

1: When a learner could not understand the meaning of the word "juvenile" in the exchange of opinion about juvenile crime, he used the target expression "What do you mean by juvenile?", an expression for the negotiation of meaning which he had selected. This situation allowed him to understand the meaning of this word, and promoted the use of the word.

2: Noise sometimes disturbed learners' understanding in communication, as mentioned in section 3.7.3. Learners used the target expression which they had selected (e.g., "I'm sorry I missed your word", "Would you please repeat the question?"), rather than simple
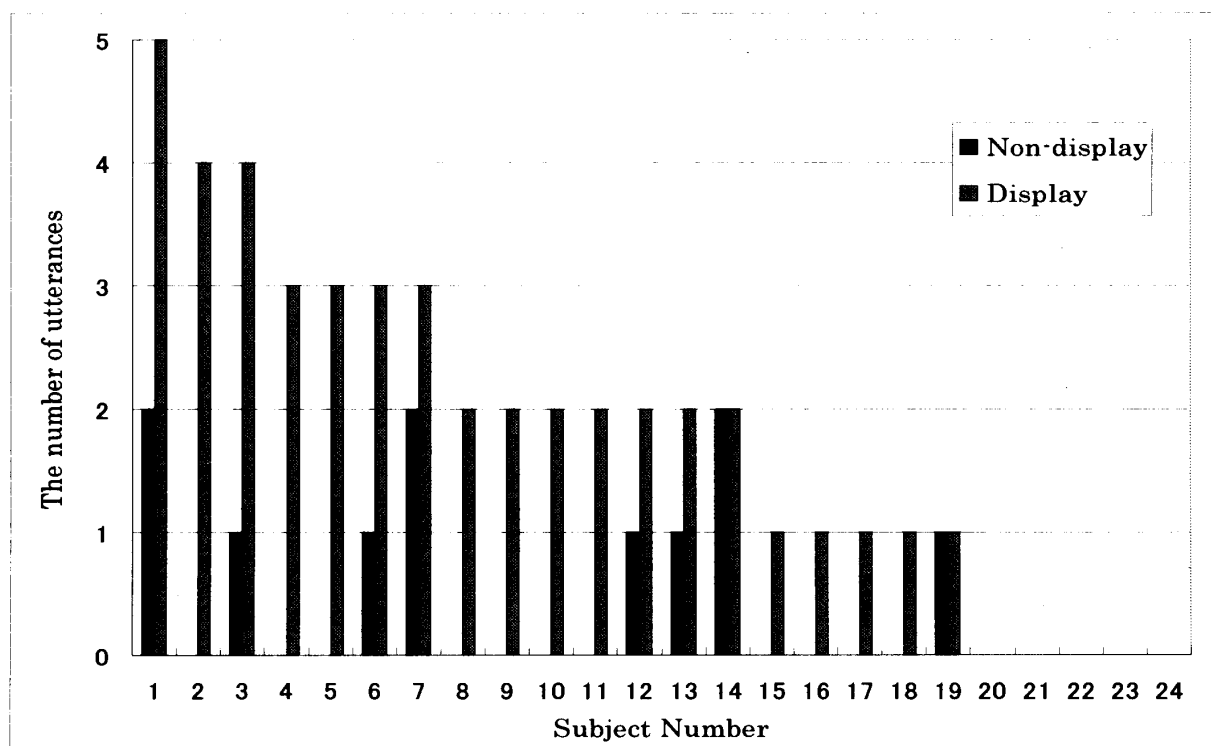

Fig. 8. The number of target expression utterances in each subject in Display and Non-display system

one-word expression (e.g., "Sorry", "Pardon").

It was confirmed that this system assisted learners in acquiring target expressions, promoting the negotiation of meaning in communication difficulty.

4. DISCUSSION ABOUT THIS STUDY

The findings from this study suggest that displaying the learning objective not only raises learners' consciousness of formulaic speech, but also encourages them to utter it in learner-centered communication in the target language. This study suggests three key factors in the usefulness of functions allowing learners to be aware of learning objectives in learner-centered communication, particularly communication between non-native speakers.

First, the videoconferencing interface allowed subjects to pay attention to the learning objective. Our previous research suggested the necessity of determining the area of eye-gazing concentration to raise learners' awareness of learning objectives. In this study, re-design of the interface helped learners utter the target expression.

The second is the choice of target expression. Subjects who uttered the target expression many times tended to select expressions concerned with communication strategies, not with task design. In the case of one subject who uttered the target expression 5 times in the trial with target expression display and 2 times in the trial without target expression display, the selected expression was one which is often used for requesting for help ("I'm sorry, I missed your word"). The other subjects also selected expressions from the same category.

The last is opportunities for utterances. Pair work seemed to promote speaking by both learners during videoconferencing. In experiment 1, learners pointed out the difficulty of finding opportunities for utterances in a group of three, because one out of the three members often had to wait for the end of the other two members' conversation or cut into their conversation. In this study, no learner complained about difficulty in communication.

Although most of the subjects used the target expression at least one time (19 of 24 subjects), we also confirmed a few subjects who did not utter the target expression at all (5 of 24 subjects). It seems that the subjects' English proficiency level and mis-selection of target expression caused the lack of the use of the target expression. The intermediate-high level subject (1 of 24 subjects) had enough proficiency to communicate in English without using the target expression. However, the other 4 subjects were not at a high proficiency level. The 4 subjects failed to select an expression to their proficiency level (2 of 4 subjects) or had no opportunity to use the target expression (2 of 4 subjects). The 2 subjects who selected inappropriately chose an expression too difficult for them to understand, even though this system offers target expression selection with the meaning in the native language. They tended to speak native language (one used native language 15% of the time, the other 12%). Moreover, they sometimes uttered the target expression in the native language. The use of native language should be counted as the use of communication strategies (Tarone 1981). However, from the view of the frequency of use of the target expression, the use of native language prevented subjects from uttering the target expression in English. Figure 8 shows the number of target expression utterance in each subject, as mentioned above.

5. CONCLUSIONS AND FUTURE WORKS

The purpose of this study was to research and evaluate the effect of this system for raising learners' consciousness of learning objectives in videoconferencing, using questionnaires and video records. This study also analyzed discourse between subjects briefly. The data shows that this system raises learners' consciousness of learning objectives and provides chances to utter the target expression. When subjects face trouble in communication, this system facilitates the use of target expressions concerned with communication strategies.

However, not all subjects were aware of the learning objectives and could use the target expression. Subjects used target expressions an average of 1.83 times in 20-minute communications. It seems that the use of the target expression depends on each subject's proficiency level. As for proficiency level, this system was not effective for high level proficiency learner to study target expressions. We should note that target expression display does not promote the utterance of the target expression without selection of a suitable expression. Although display of the target expression assists the utterance of the expression for low-intermediate learners who selected a simple expression or one concerned with communication strategies, we confirmed the

tendency that low-intermediate learners who selected a complicated expression uttered it in the native language instead.

Future works towards the realization of effective oral communication learning are recommended as follows:

(1): Focusing on target expressions concerned with communication strategies

In this study, target expression categories were concerned with not only communication strategies, but also situations when learners wanted to express their opinions or ask questions, due to the task design. The result of this study indicates that learners tended to utter target expression concerned with communication strategy frequently. Instruction would need to be designed based on the use of communication strategy as the learning objective.

(2): Implementation of target expression selection during videoconferencing

Learners desired the ability to select the target expression during videoconferencing. Even if learners recognize their own proficiency level, it is difficult for them to predict what kinds of communication troubles they will face in videoconferencing. This function will increase learners' awareness of the learning objective and of uttering the target expression, because learners can select a target expression categorized by the kind of trouble they are facing in videoconferencing; in other words, they can select a suitable target expression when they face communication troubles.

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