

An Inter-Cultural Approach to Network-Based Language Learning

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This article, based on an on-going inter-collegiate project in Japan, reports on (1) the design of a collaborative workplace between EFL teachers and JSL (Japanese as a second language) teachers, (2) collaborative styles of learning between Japanese EFL students and Asian JSL international students from Korea, China and Southeast Asian countries using e-mail and an electronic bulletin board system (BBS) for computer mediated communication, and (3) inter-cultural, task-based forms of negotiating meaning, information exchange and building relationships in multi-cultural settings for authentic and autonomous foreign language learning. Findings from the project indicate two learning environments; authentic audience and multi-cultural settings and two important learning strategies; autonomous learning and collaborative learning, all of which suggest the necessity of building up a new paradigm of 'Communication with Language and Technology' for foreign language learning.

In an advanced information society, the information network has brought enormous change to our scope and ways of communication. This change consequently requires a reexamination of language education, the main target of which should be communication, and a better understanding of a multi-lingual, multi-cultural society which leads to a positive multi-cultural symbiosis.

COMPUTER MEDIATED COMMUNICATION AND COMPUTER AMPLIFIED COMMUNICATION

The computer and the related information network have changed the form of communication through two basic functions. The first function Computer Mediated Communication (CMC), whereby the contents of information, i.e. huge data-based intellectual resources all over the world can be obtained at anytime and from any place in the network, forming an infrastructure for a learning environment not limited by time and space. At the same time, the network supports and expands varieties of communications among people beyond time and space. E-mail and electronic bulletin board serving as “time-difference communication tools,” chats and videoconferencing as “real-time communication tools,” and the use of cyberspace as “virtual communication tools,” will definitely change and expand learners’ communication patterns.

A second function might be called Computer Amplified Communication (CAC), an intelligence amplifier to improve learner’s ability and thought. Computers can be regarded as a function of language to change, expand, and amplify the ability and the process of human thought. An instance is editing with word processors to deepen the process of composing sentences, allowing cutting or pasting instantaneously; another is hypertext linkage which expands understanding by combining words with image and voice information in the process of reading.

ENGLISH AS AN INTERNATIONAL LANGUAGE AND INTER-CULTURAL COMMUNICATION

The change of communication patterns calls for a change in language education. The basic strategy of foreign language teaching in Japan, the main target language of which is English, has been to understand the standard mother language of English speaking countries and their cultures. However, it is reported that almost 80% of information through the Internet is *Englishes*

(varieties of English) and that the Expanding Circle (EFL) is overwhelming the Inner Circle (English Native Speakers) and the Outer Circle (ESL) (Crystal, 1998). This implies that people in multi-racial and multi-cultural societies, whose mother languages are not English, are using *Englishes* as primary common languages for mutual communication as it has been in the cross-cultural realities of politics, economy and society. In a word, the non-English multi-racial and multi-cultural society has developed English as an international language, and has acknowledged it as a common language for communication in the world.

Information and communication technology opens the door for a positive multi-cultural symbiosis. International students who learn Japanese in Japan and Japanese students who learn English in English countries are both exposed to the circumstances (1) where target languages are used in their daily lives, (2) where understanding of the different culture and inter-cultural communication happens in daily life, and (3) where foreign students face differences as indispensable matters in their foreign language learning. On the other hand, in the case of foreign language teaching in Japan where Japanese is used in a daily life, understanding of different cultures is a one sided contact for the barter of information (cross cultural communication) and not a mutual exchange of different cultures (inter-cultural communication). The purpose of foreign language education in Japan is essentially to teach Japanese students how to communicate with overseas people for the purposes of understanding languages and cultures, but obviously foreign language education in Japan has not practically contributed to building up communication skills for Japanese students in multi-racial and multi-cultural settings.

BACKGROUND

A Socio-Cultural Aspect of Japanese Learners

We are aware that communications by speech acts are greatly influenced

by individuals, society, culture and language. The positive speech acts required in the English language toward persons and groups is often a problem for Japanese learners of English in the acclimatized society with little self-assertion peculiar to Japan. The difference of self-assertion creates a large divide between the Japanese culture which doesn't value the language message in a high context culture as compared to the British-U.S. culture which values the language message in a low context culture (Barnlund, 1989). Most Japanese do not seem to expose themselves to a multi-cultural social environment. In fact, Japanese assimilates English into its own culture and makes it only an object of foreign language education. The internationalization of politics, economics and the society as well as the highly developed information and communication technology have not permitted the isolation of Japan from the world and this should also apply to foreign language education in Japan. In order to solve such problems, it is necessary to introduce the self-assertion into communication strategies in foreign language learning.

One approach is, by taking up topics from daily life information and ideas, to learn the basic knowledge and technology of speech communications using of mother language so that Japanese learners realize the importance of communication skills and communication strategies for sending a positive language message, regardless of language. Another is to give priority to direct experience with overseas peer students of different cultural backgrounds or well-skilled members of working society, rather than restricting students to study with peers of the same generation and in the same grade of Japanese school culture. With such experience, learners might reexamine and restructure their views in a situated learning environment of 'legitimate peripheral participation' (Lave & Wenger, 1991). They will, as a result, develop a more advanced ability and the understanding of a different culture. The other learning approach is to shift from the learning environment with few possibilities for authenticity, to an efficient learning environment with authentic audiences beyond time and space, where learners can share and develop information and ideas. This environment is a learning community,

(1) where learners send and receive individual desires and concerns as well as free ideas and judgments, and (2) where learners build up knowledge and skills by expanding communication.

To achieve this, we designed a course with a special emphasis on the strategy of an inter-cultural approach to network based language learning under inter-cultural settings as follows:

- 1) Students will understand the difference and equality of culture by recognizing the relativity of an individual culture. This will enable students to overcome cultural narrow-mindedness differences.
- 2) The meta-language ability to reflect and control languages will be acquired by comparing a foreign language and the mother language. Students, in inter-cultural settings, discuss matters through English and Japanese.
- 3) The understanding of different cultures will stimulate performance in the foreign language, and promote universal understanding of language and culture. This will enable students to achieve inter-cultural exchange of their mother language and culture with people of other languages and cultures.

A Communicative Language Learning Aspect

Second language learning, in principle, aims to understand others and other cultures as well as to transmit ourselves and our culture through communication verbally and non-verbally. In reality, individual language skill is often divided for teaching and learning but it is always integrated depending on the patterns and purposes of communication, because no individual language skill alone is used alone for communication. Moreover, communication skills are acquired through verbal and non-verbal language activities in social-cultural contexts, rather than through language operation and acquisition of language knowledge in the classroom. Consequently, 'intellectual skills' would be framed as a mediator in the process between language skills and

communication skills. In a word, intellectual skills are the communication skills integrated and complemented by language skills, as shown in the following examples:

Ability to search, to discover, and to retrieve:

Listen & Read => Searching & Finding skills

Presentation ability to organize and publicize:

Write & Speak => Presentation skills

Ability to understand and to exchange:

Read & Write => Correspondence skills

Listen & Speak => Conversation & Dialogue skills

Speak & Listen => Interview & Questioning skills

Ability to organize idea and information:

Listen & Write => Note-taking & Organizing skills

Read & Speak => Scanning & Commenting skills

COURSE DESIGN AND PRACTICE

The author has designed an inter-collegiate English class '*English for Communication*' for 1st and 2nd year college students at Teikyo University of Science and Technology (TUST) with the principle of language learning through communications for inter-cultural understandings. Its syllabus sets out the purpose.

In an advanced information society, Japan is urged to recognize the necessity of communication with foreign countries through English as an international language. However, how can we carry out exchanges with international people inside and outside Japan? How should we behave in encounters with different cultures? How should we express our ideas and opinions? In this course, we practice and experience the method of communication in English and Japanese through an exchange with international students in Japan.

To test this, an inter-collegiate project started in 2002, after one semester experiments in the previous year, for inter-cultural communication via

network technology between Japanese students (JS) who learn English at TUST and international students (IS) who learn Japanese at Tokyo International University (TIU), Kanda University of International Studies (KUIS), Ryutsu Keizai University (RKU), and Takushoku University (TU).¹ The IS are mostly from Asian countries including Korea, China, Taiwan, Thailand, Hong Kong, Vietnam and Malaysia.

Class Design and Learning Target

Exchange classes were designed by a collaborative team of English and Japanese professors with special emphasis on three points; “preparing the same tasks and scheduling the terms of posting to BBS”, “sharing cooperative development of teaching materials that support the core of the task-based learning”, and “grouping JS and IS together in each group to activate communication and exchanges as a group task”. We shared the following detailed educational purposes reflected in each class syllabus and in the products we would expect as the project results:

- 1) To encourage students’ autonomous learning through Internet exchange that is within the same generation but with different cultural backgrounds.
- 2) To motivate students’ second language learning through interactive and collaborative work under the same tasks and projects.
- 3) To stimulate inter-cultural communication and understanding in Japanese and English with authentic audiences.
- 4) To give more chances of writing short conversational sentences and long critical passages among peers rather than just assignments written only for teachers.
- 5) To develop EFL and JSL courseware, materials and pedagogical theory.

¹ Professor Noriko Okamoto, Professor Kumiko Yonezawa, Professor Akane Tokunaga and Professor Masako Morishita joined in the project as Japanese teachers for international students as well as researchers for setting up collaborative web-based learning communities.

Cyberspace Platform

The main cyberspace platform for the project is an electronic bulletin board system (BBS) on the web, which provides a bulletin board service, mailer, questionnaires and quiz, and chats. It also provides administrators (teachers) with an authoring function for titling, designing functions, time schedule, revision and supplementation during on-going projects as well as data collection and data processing for evaluation. Students can post their messages, pictures and video clips anytime, anywhere and private emails and mobile phones were also encouraged for further personal communication besides the main BBS platform. In the spring 2003 semester, three task-based bulletin boards were prepared for communication among JS and IS by each group under the same theme. Additionally, two free discussion bulletin boards, “*food behavior unbelievable!*” “*I don’t understand Japan and Japanese, why?*” were prepared to activate arguments of different cultures. ‘Office hour’ bulletin board was also set for mutual communication among teachers and between teachers and students with the concept that all teachers support all students in a learning community. Questionnaires with a graphical interface were available to students who wanted to reveal different cultural ideas and feelings statistically.

Class Work

In TUST classes, each task was designed as one unit of the course lasting three weeks (90 min x 3) as class work. Students were encouraged to access the BBS and exchange e-mails outside the class as much as possible.

The first week: Logical and critical thinking (mind-mapping, KJ method, etc.) and study skills (debating, discussion and questioning method, etc.) were practiced to improve communications.

The second week: Group work and internet search activities were set to solve assigned tasks, etc.

The third week: Composing Japanese and English essays with a word processor and posting their work to the BBS.

Supplementary Teaching Material

All the teaching materials in TUST classes were stored digitally inside the local area network server so that students could access and obtain materials anytime and anywhere. Those materials were purposely developed as scaffolding materials which would support search tactics and the autonomous study of learners. They were also designed as learning management tools including the class schedule table, BBS and web e-mail manuals, communication methods, etc., and as launching hyperlinks to the reference documents, English samples of expressions, URL on the web, etc. Those digital contents and websites were shared with collaborating Japanese teachers and reflected properly for further joint collaboration.

Evaluation Method

The formative evaluation to the learner was adapted to mainly four specific objectives:

- 1) Organized thought and logic to assigned tasks were measured qualitatively by referring and comparing the assigned tasks posted to BBS.
- 2) Positive attitudes to posting and exchange frequencies were counted quantitatively by individuals, including the writings on BBS and email exchanges.
- 3) Skills, expressiveness and length of English writing were measured qualitatively and quantitatively by proofreading.

FINDINGS

Data for the 2003 spring semester were collected from a paper and web questionnaire, and postings to the BBS, and analyzed for inter-cultural, CALL, communication and language aspects.

First, pre-questionnaire data were retrieved from key words in the free

descriptions in TUST classes which revealed Japanese students' readiness and motivation.

TABLE 1
Question 1: What is the Purpose of Taking the Course?

Answer	Percent
To know foreign cultures and way of thinking for future study or work abroad	24%
To acquire communication skills	19%
To broaden ways of thinking	15%
To master positive presentation skills	15%
To learn communicative English skills	12%

TABLE 2
Question 2: What is Your Future Plan?

Answer	Percent
To live or work overseas	36%
To study or research abroad	29%
To visit and experience foreign countries	23%

TABLE 3
Question3: Why do You Want to Improve Your English?

Answer	Percent
To communicate with overseas people	36%
To master basic skills	36%
To express ideas and opinions	23%

TABLE 4
Question 4: Have You ever Made any Contact with Overseas Peoples?

Answer	Percent
Yes; only a few native speakers of English mostly in schools and language schools; but many Asian people in daily social lives.	56%
No contact at all.	44%

Secondly, post-questionnaire data were also retrieved from key words in the free descriptions to find achievement and course evaluation by Japanese students. Overall course evaluation was positive (84%) but 16% were negative mostly because of few responses from partners in a group, which sometimes happens in such a group work project. JS answered to such specific questions:

TABLE 5**Question 1: What did You Learn From International Students through the Exchange?**

Answer	Percent
Learned the differences of culture and thought which was very useful	48%
Shared the differences and similarities of culture and thought	43%
Felt the necessity and reality of using foreign language for communication.	9%

TABLE 6**Question 2: What about Using Japanese and English for Constructing Messages?**

Answer	Percent
Struggled to construct logical messages both in Japanese and English because they were not used to it	37%
Recognized the difference of logics between Japanese and English	34%
Reflected on their poor Japanese	30%

Third, web questionnaires were developed by several groups of students which revealed more real and specific data of food and food cultures assigned as a semester theme and they indeed deepened the differences and similarities of daily culture and thought among both students. Comparison on their preferences on Japanese food and food behavior for IS (115 IS answered) and for JS (87 JS answered), investigation on college students' food life (168 IS & JS answered), and several more questionnaires were shown by graphical charts and descriptions on the web.

Lastly, postings to the bulletin board were downloaded in a text file for

evaluation and analysis of how JS and IS students exchanged on the web. Statistically total 33 groups, each 5 to 6 JS and IS in a group participated in this project and approximately 40 messages per group, totally 1,320 were posted during the session. Two analyses were practiced; one is a statistical analysis of numbers of postings and forms of sentences; i.e., question form, answer form or descriptive form. The other is a tracing survey of individuals by discourse analysis to find how students learned or failed to organize Japanese and English sentences logically and critically through exchanges of postings.

Here are samplings of total numbers of postings comparing IS and JS.

TABLE 7
Samplings of Total Numbers of Postings by Comparison with IS and JS

University	Number
TU (6 groups)	IS (22); postings (118) question form (19) answer form (37) descriptive form (62) JS (15); postings (118) question form (31) answer form (16) descriptive form (71)
TIU (3 groups)	IS (11); postings (50) question form (2) answer form (27) descriptive form (21) JS (6); postings (49) question form (15) answer form (11) descriptive form (23)
RKU (3 groups)	IS (17); postings (53) question form (5) answer form (6) descriptive form (42) JS (12); postings (72) question form (16) answer form (8) descriptive form (48)

TABLE 8
Samplings of Total Numbers of Postings by the Amount of Active Exchanges

University	Number
TU-TUST group04 (6 students)	postings (55) questions & answers (29) descriptive (26)
RKU-TUST group02 (10 students)	postings (33) questions & answers (8) descriptive (25)

Here's an original sample posted by a Japanese student in TIU-TUST group 1 (5 students); postings (36) questions & answers (21).

There are various foods in the world. There is meal culture which is different with a country and an area. Furthermore, an individual -- the view over food is different. I think that the difference in a view is the individuality of each country. Although criticism is received from other countries, such as Korean eats a dog and Japanese eats a whale, I think that it is an important tradition. Therefore, I think that a dog, a whale, and any animals can be eaten.

a) Although there is country to blame to eat a whale for reasons of rare, whales are increasing in number. Conversely, it is said that there is also a place whales increase in number too much and it becomes impossible to catch a fish.

b) There are those who eat a whale also in Japan, and those who do not eat.

c) Those who oppose eating whale are also eating animals. There is no reason for not eating a whale. The man of being pitiful is also in eating a whale and a dog. I think that it is an animal dear to be sure. However, I think that it does not become a reason to criticize the meal culture of other countries. I think that the feeling for which I appreciate even when eating what food is important. I think that I should consider obtaining a life from what is eaten.

Inter-Cultural Aspects

Pre-questionnaires (Tables 1, 2, 3) show the very strong readiness of Japanese students to communicate with overseas people. The theme of food and food behavior in different cultures which is strongly rooted and reflected in their own cultures also contributed to their exchanges as shown in web questionnaires by students. As Table 7 shows, Japanese students used more question forms than expected which were surely lead by their readiness. In fact, leading questions stimulated more postings in successful groups, where a thoughtful but critical, outspoken but constructive communication was observed by their declared opinions, rebuttals, and questioning to avoid

misunderstanding and stereotypical ways of thinking. These friendly and generous exchanges must have come from being the same generation as college students, being the FSL and EFL peer learners and being Asian students with similar cultural backgrounds. (Tables 5 & 6)

Table 4 shows that 44% of students had no authentic audiences in their past 6 year foreign language learning and that 56% of students made many personal contacts with Asian people in their daily lives and only a few contacts with native speakers of English in the teaching classroom environments. Japanese students were happy with their understanding of their own culture and different cultures not only by task research but by peer to peer observations on the BBS and questionnaires in Japanese (Table 5), but unhappy with the struggle of constructing logical and persuasive sentences both in Japanese and English in front of overseas language learners (Table 6).

CALL Aspects

Another data from post-questionnaires of how students felt about the use of technology in English teaching showed that 34% wanted more to improve their computer literacy, 34% enjoyed the tool for communication, and 28% felt it necessary to use the technology in a language learning course. The figures of 84% who felt the course satisfactory in the post questionnaires and total 96% who welcomed the use of technology showed how students wanted to learn in CALL environments. Students learned very much beyond the classroom. Naturally their concerns for the task were (1) what and how the other students with different cultural backgrounds would think and feel and (2) their work on the web. In the classroom, students worked in a group and learned from teachers the ways of communication, theories of logics and methods of compositions, and prepared with a word processor on a computer system for postings to BBS. But they spent most of their time on the web and learned much from their discussions, arguments and interactions in their learning communities. In fact, they really enjoyed posting pictures for self-introduction, emailing privately for personal contact, uploading one-minute

video recordings for appealing to others personalities and ideas with a broader use of technology as communication tools.

Assigned tasks enabled students to retrieve any necessary data from the enormous learning resources on the network and to construct more sophisticated Japanese and English sentences with the use of the dictionary and translation engines inside the computer system. Downloading files with key words in search engines became their daily practice for referencing resources, and copying and pasting sentences into word processors became their usual procedure of reconstructing Japanese and English sentences.

Communication Aspects

Because the class operates as a type of task-based workshop using student centered activities, students themselves activated their own discussions and exchanges of ideas on the web (approximately 40 postings by group) as well as taught and learned among themselves as peer groups. CALL environments where students operated each computer and accessed the web by themselves also contributed to their autonomous learning activities. Teachers tried to facilitate students in each classroom by supporting group activities and on the web by setting up an office hour corner for mutual communication between teachers and students.

The number of questions and answers in Table 7 shows that JS were more active in the questioning (62 vs. 26), while IS were more positive in the answering (70 vs. 35). This is how communication carried out on the web. Figure 8 shows that the number of questions & answers (29 vs. 8) is directly proportional to the active interaction among students as the number of postings indicated (55 vs. 33) in comparison with the number of students in each group (6 vs. 10). Indeed successful groups were observed to have had more interactive exchanges of questions and answers, while unsuccessful groups seemed to have only posting of descriptive forms of writing, which was mostly self-introduction to unknown audiences and merely task assignments with no consciousness of interaction.

Language Aspects

As Table 6 shows, JS made an effort to construct Japanese writings more logically and politely than before in order to make their Japanese understood more clearly by IS who are learning Japanese as a second language. In fact, translation from Japanese to English made them realize how poor their Japanese and how ambiguous their structure of logics were. Therefore, they started to spend much more time for revision and reconstruction of sentence composition in Japanese and then in English before posting to BBS because they were aware that those postings on the web were critically observed by Japanese peers and international students.

Students developed their writing in English and Japanese, based on the logical structure of sentence composition with advice from teachers, and on their own ideas and from the treasure of knowledge within browsers on the web. Then, they improved their writing, based on their positive attitude and frequencies of exchanges, and on their attitude toward the understanding of different cultures. Students were also motivated to continue further communication with students outside the class after the term and they also expressed a desire for more chances to go out and meet overseas people.

CONCLUSION

Findings from this research reveal four basic learning environments and strategies for designing foreign language learning courses are: authentic audience, multi-cultural settings, autonomous learning and collaborative learning.

Johnson (1999) defines an authentic audience as follows: 'An authentic audience is an audience that is concerned exclusively with the meaning of the speaker's message.' That is, authentic audience, if not any direct audience in reality, plays a very important role for language use and language learning from the viewpoint of being conscious of a communication target. In

computer mediated communication, the following merits are considered against the language use and the language learning (Johnson, 1999).

The size of the audience available to learners has increased dramatically;
Learners are no longer restricted to their physical geographical location;
Audiences can be invisible but immediate;
Audiences are by and large focused on the meaning of message rather than on their form;
Communication is language based to an even greater extent than before;
The forms of language used in this medium occupy a middle ground between conventional written and spoken forms;
Relations between readers and writers are not specified.

As findings show, Japanese students whose audiences are JSL international students with different cultural backgrounds, and international students whose audiences are EFL and native speakers of Japanese with authentic cultural backgrounds, have both communicated and learned through the exchanges on a web-based network community. Teachers of native speakers and the accumulation of words and grammar in a class do not always guarantee an effective class, a learner's motivation, and the achievement of communications skills because the essential of language learning is communication with an authentic audience and task. In the negotiation of speaking and listening, authentic audience plays an important role even if there is no direct audience. The virtual audience in writing and the intention of the audience in reading will be of importance for the negotiation of meaning. In a word, the learner will not find the real meanings of learning without higher-level cognitive activities of interference, negotiation, interaction and enhancement of the meaning of content, and without authentic audience for appropriate negotiation of meaning. It is, therefore, very much important to design authenticity as a learning environment in foreign language learning.

English is 'an international common language' rather than the previously held belief of a 'British and/or American English language', which needless to say calls for a new methodological approach for foreign language education based on a multi-cultural symbiosis. This should be argued not

only as a general agenda, but as a specific problem of Japan in Asia where much more communication in English among non-native speakers is required inside and outside Japan. As findings show, inter-cultural exchange with learners in Asia whose cultures are similar but different may bring more advantages to Japanese students in the inter-cultural understanding. Japanese students would avoid stereotyped understanding and share common feelings with no superiority or inferiority as equal foreign language learners of English language.

A multi-cultural communication in foreign language education should in principle give priority to international exchange and our approach is easily adaptable to internationalization, which would be our next projects in Asia. In general, international exchange has three stages; encounter (new contact), interaction (influence to each other), and production (results of collaboration). 'New contact' often ends up transitorily because others will not open up to you unless you open yourself to share their unknown culture and ideas. 'Influence to each other' often ends up only in the exchange of information because individual wants to self-invest any further in the project. 'Results of collaboration' often ends in self-satisfaction because the continuation and the development of the results by way of collaboration is hard especially when individuals are faced with the idea of continual dialog accompanied by a progress in ideas and thoughts. However, multi-cultural, inter-cultural communication in foreign languages can be designed effectively with the support of teachers and network-based facilities as in the case of our project, which will surely bridge international exchanges between learners in the world. Foreign language education in Japan has reached the stage where it is time to rid itself of a traditional school culture based solely on the acclimatization within a single culture. It is time to positively contact multi-cultural societies, and to practice more collaborative learning and international education with the use of the Internet.

As findings in communication aspects show, autonomous learning is often discussed in comparison with teacher control. The teacher's important role as facilitator is to provide learners with modeling, mediation and scaffolding,

thus learners are given ownership of the process of developing solutions to their learning task and may, in fact, do so with the teacher's guidance and mentorship. CMC and CAC support autonomous learning in the following three respects.

First, as we discussed, CMC eliminates the restriction of time and space for traditional classes. World Wide Web on the Internet stores a huge learning resource and guarantees the width and the depth of learning by the learner's autonomous, positive access. The closed teacher's kingdom in the class, of ready-made printed teaching materials, peers of the same class, the same grade in the same generation, etc are replaced by a learning environment which supports autonomous learners with innumerable teachers inside the network, limitless learning resources, enormous collaborative peers and a ubiquitous world.

Secondly, the possibility that learners challenge to do a new task begins when learners meta-cognitively ascertain the distance between the present point and the target point, as Vygotsky (1978) says, 'Zone of Proximal Development: ZPD'. Such a learning behavior is a meta-cognitive activity that can be recognized by knowledge of result (KR) information with CAC as an intelligence amplifier to improve learner's ability and thought. Learners can improve their own meta-cognitive abilities by adding various self-evaluations in CAC feedback while receiving various supports for the accomplishments of their goals by the teacher's formative evaluation and peer's reciprocal evaluations.

Lastly, one of the most important factors is whether an individual learning pace and various learning methods are guaranteed to assist individual learning. For instance, writing sentences requires individual pace with different ideas and abilities, and allows different procedures and techniques. Moreover, the learning outcome is sure to have a quantitative and qualitative evaluation. CAC, which amplifies the idea and the ability of human beings, and CMC, which supports and mediates communications with many people, both accept diversity and form a learning environment which supports various learning strategies. Such a learning environment must be indispensable

for autonomous learning.

An electronic bulletin board system was mainly used in our network-based language learning. This asynchronous group communication model is a group learning exchange tool represented by BBS and a mailing list as well, in which more than three learners exchange opinions, complement and evaluate each other. Therefore, the basic language form of this tool becomes formative among learners on condition that learners participate in the exchange with concern, interest, autonomy, subjectivity and aggressiveness. This system works as a collaborative group learning tool for discussion in which learners enact logical and critical ways of thinking. Learners clarify differences with others and feedback their insistence, verifications, objections and agreement. However, as we see in unsuccessful groups which failed in communication, more research is required in the aspects of group-work design, group dynamics and teacher's facilitation.

An asynchronous personal communication model was also partially practiced in our project, which is represented by e-mail, a tool for correspondences with person to person language messages. As the author discovered in another project course, 'English for Emails' at TUST, the basic language form of this tool is a dialog from one person to another and a personal correspondence with an authentic audience. In speech acts, it involves a process of expecting the other's reaction while at the same time being conscious of the other. Therefore, the language form tends to become interactive by quoting the style of the other and simple and provisional by replying immediate and informal. Moreover, a basic characteristic of the dialog is a homogeneous exchange of language. This communication firstly starts with the exchange of information but lastly ends with the exchange of collaborative learning that enables the progress of idea and thought through mutual understanding. We also need to discuss further collaborative learning models of communications which would be effective for language learning.

Synchronous and personal communication model as represented by chats, net meeting, etc in written form of expression is the next assignment of our project. These are the forms of written communication in real time even in

the case where the others are unseen and still in the present. In addition to such verbal communication tools represented by phones, the multi-media typed net meeting and chats realize both verbal and non-verbal communication. Regardless of the partial restriction on non-verbal information, it is revolutionary to be liberated from the restrictions of space and to be open to the possibility of both verbal and non-verbal learning. The basic language form of these learning tools is a real-time dialog, aiming for completion of the conversations in collaboration with others, which naturally tends to accept any interruption to correct misunderstandings immediately in order to promote the conversation positively within the rhythm of given responses.

The other is a synchronous and group communication which will form a part of ultimate digital communication society with the highly advanced technology of videoconferencing and virtual cyberspace, etc. It is a virtual learning community where people pass the time chatting as family and friends enjoying casual daily conversation at home or in their office or work places. The basic language of this tool, therefore, becomes an ultimate communication system that liberalizes any restriction of space and collaborative learning and any boundary of 'foreign countries' in the future.

In conclusion, this paper has suggested four basic learning environments and strategies from findings throughout our inter-collegiate project during the last two years. Though still on-going, we have learned that more scientific research is necessary, as 'Learning Sciences', which should be based on how learners learn and what learner-centered learning strategies and how we should apply to language learning.

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REFERENCES

- Barnlund, D. C. (1989). *Communicative styles of Japanese and Americans: Images and realities*. CA: Wadsworth.
- Bonk, C. J., & King, K. S. (1998). *Electronic collaborators*. Lawrence Erlbaum Associates, Inc.
- Bransford, J., Brown, A., & Cocking, R. (Eds.). (2000). *How people learn*. National Research Council: National Academy Press.
- Crystal, D. (1998). *English as a global language*. Cambridge, MA: Cambridge University Press.
- Gardner, D., & Miller, L. (1999). *Establishing self-access: From theory to practice*. Cambridge: Cambridge University Press.
- Johnson, B. (1999). *Authentic audience*. In J. Egbert & E. Handson-Smith (Eds.), *CALL environments*. TESOL Inc.
- Lave, J., & Wenger, E. (1991). *Situated learning - Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Nunan, D. (1993). *Collaborative language learning and teaching*. Cambridge: Cambridge University Press.
- Nunan, D. (1997). *The learner-centred curriculum*. Cambridge: Cambridge University Press.
- Pennington, C. M. (Ed.). (1996). *The power of CALL*. Houston, TX: Athelstan Publications.
- Swaffar, J., Romano, S., Markley, P., & Arens, K. (Eds.). (1998). *Language learning online*. El Sobrante, CA: Labyrinth Publications.
- Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.
- Warschauer, M. (1999). *Electronic literacies*. New Jersey: Lawrence Erlbaum Associates, Inc.