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Practice of Online Chat Communication between Two Countries and across Different Curricula

Ritsuko Saito¹⁾ · Noriko Ishizuka²⁾

This paper will report on the practice of online chat communication between the students of Japanese at the University of Wollongong, Australia and the students of English at Doshisha University, Japan. The students from both countries have been communicating via online chat as part of the advanced Japanese language course at the University of Wollongong and an IT literacy course at Doshisha University respectively. The students “talk” to each other about various issues ranging from personal to global issues. Rather than offering mere observations of cultural exchange, this paper hopes to promote a wider application of the medium in education. The paper also hopes to present some ideas of cooperative teaching, collaborative learning, and cross-cultural understanding across different curricula.

Keywords

online chat, collaborative learning, cooperative teaching, cross-cultural communication and understanding, CMC

Introduction

There have been many reports about the various benefits of computer-mediated communication (CMC) in the framework of education. Some well-known benefits are: that the participants are able to work at their own pace and at an hour of their choosing (Sutherland-Smith 2002); and that participants also feel more comfortable and confident in expressing their opinions than in face-to-face communication as they can see the text of the discourse and understand it better. They also find the experience less threatening when they do not see other participants (see, for example, Freiermuth 2002). For that reason, online chat in particular is suggested to be an ideal tool for collaborative learning activities whereas in a traditional language class it is often difficult for the parties to all actively participate at the same time (Kitade 2000 and Freiermuth 2002).

The language used by participants in CMC differs from study to study. For example, foreign language classes have involved a variety of CMC participants in the past: ‘native speakers and non-native speakers of the target language’ (Kitade 2000), ‘non-native and non-native’ (Freiermuth

2002), and ‘non-native and native as volunteer’ (Iwasaki and Oliver 2003). The participants of those studies were in the same course (except the volunteer in the study by Iwasaki and Oliver) and there are only a few studies on CMC which include participants from different countries (see, for example, Walther 1997, and Cisuentes and Shih 2001). Unlike these studies where all the participants within the same course discuss and decide on a task via online chat, the participants referred to in this study are required to complete their own respective tasks by cooperating online. Therefore, this case is unique in the sense that these participants of online chat are in two different courses (Japanese language and English IT literacy) in two different countries (Australia and Japan); both groups can be identified as either native or non-native speakers depending on which language is employed in the course of communication.

The degree of CMC incorporation into courses often becomes problematic for educators when employing the medium. In order to utilize CMC in the best possible way, for example, understanding of the issues that learners might face using computers and flexibility in educators’ practice appear to be key factors to a better learning and teaching environment (McCarthy 1999). Therefore, this study attempts to document and demonstrate how online chat practice between the students in two different courses from two different countries has developed over nine years. It also

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discusses what benefits online chat has brought in based on the students' reports on their chat activities in the year 2003.

A history of our chat practice

Collaboration through computer between Japanese language classes at the University of Wollongong and English language classes at Doshisha University first started in 1995. These nine years of cooperative teaching utilizing CMC have seen development in several aspects. From 1995 to 2000, a Unix-based one-on-one simultaneous conversation style (y-talk) was employed where each student was paired up with one student from the counterpart university. Since 2001, online chat has been employed within a WebCT system, with five virtual chat rooms, each of which comprises four or five students from both sides. In other words, each room contains at least two students from each university and they carry out their discussions as a group in the allocated virtual room. With this shift from pair work to group discussion, the instructors no longer have to rearrange pairs when some students are absent, and the students are able to discuss topics more interactively as they stay in the same chat room and talk with the same people throughout the semester.

When y-talk was first implemented in our courses, the role of chat sessions in each course design was initially assumed to be the opportunity where the students can obtain first-hand information and opinions from the native speakers of their target language. For the students of Doshisha University, it was also considered as an appropriate learning environment for having "conversation" with native speakers of English and for the students of the University of Wollongong it was a tool for having conversation with native speakers of Japanese. Although the students have always taken initiative in discussion, online chat practice has become more structured in its planning and in the implementation of tasks as the instructors have gained more experience in the use of the medium. The instructors have also been able to benefit from observing students' learning and better understand the potential and the weaknesses of chat use in each course. Both courses have, therefore, been able to add variety to the content of discussion by promoting extra-curricular e-mail correspondence to supplement online real-time discussion or to prepare for the next session of online chat. For the online discussion, tasks are also assigned in each talk session in relation to discussion topics to help students understand other class activities in the respective coursework. Moreover, in order to keep up with

current affairs in the world, the students gather articles from the internet and exchange opinions on what is happening in each country and in the world. In summary, the use of online chat has been revolved to be better utilized in each course over the nine years. The following section will now discuss this aspect.

The role of online chat practice in each course

The University of Wollongong, Australia

The university offers two compulsory language courses for Japanese majors in the final year (that is, the third year). The class meets every Tuesday and Thursday for a total of five hours per week for thirteen weeks per semester. The courses usually consist of a one-hour Kanji lesson and four hours of grammatical instruction. Online chat session takes place utilizing one of the four hours of grammar when it commences. Through online chat, the students practice, recapitulate, and apply what they have learned in the courses, and they prepare for a project. Communicating with students at Doshisha University, they are strongly encouraged to use new grammatical structures and expressions learned in the courses. They are also expected to ask chat partners their opinions and to discuss the theme of the project, which involves an essay and an oral presentation. The project is designed for the students to incorporate and demonstrate their newly acquired linguistic knowledge as well as the understanding of cultural and social issues. After each session, students are required to write a report on each chat session in Japanese and a self-reflection and evaluation on their chat practice for assessment.

Doshisha University, Japan

The department of English at Doshisha University offers this one-semester elective language course for 3rd- and 4th-year students. This course is designed to integrate language training with computer literacy training, requiring a sufficient level of typing proficiency as well. The class meets every Tuesday from 9:00 to 10:30 for thirteen weeks. There are four to six 60-minute online chat sessions each semester. Besides online chat with the students at the University of Wollongong, the students in the class experience e-mail correspondence with Japanese language classes at American universities such as Amherst College and Middlebury College. After the end of their e-mail correspondence and online chat, the students conduct a project in creating their own English web pages to develop both English writing skills and computer skills. This project also offers them the opportunity to present their achievements to

the world.

Description of chat session in 2003

During the year 2003, an average of 22 students of Japanese at the University of Wollongong and English-major students at Doshisha University participated in online chat over a seven-week period in the first semester and a four-week period in the second semester. They first logged on to the WebCT managed by the University of Wollongong and then went to the chat room which was assigned in advance by the instructors. They were instructed to balance the use of the respective languages (for example, the first half hour in English and the second half in Japanese or vice versa).

The general observation of the instructors and the reports of the students in 2003 reveal four notable functions of online chat practice: common ground for task-based discussion, tool for training in information gathering, collaborative learning environment for the formation of a learning community, and opportunity for self-enlightenment. The following section will explain these four aspects and how they work for the students in the respective course.

The functions and benefits of online chat

1. Common ground for task-based discussion

This section describes how online chat can provide an opportunity to recapitulate what students have studied and enhance other class activities. Prior to each chat session, the instructors from both sides decide on a discussion topic which takes into account the objectives and activities of their courses.

One example involved a discussion of a Japanese newspaper article about "putting on make-up on the train." The article was initially used in the class activity at the University of Wollongong (UOW hereafter). The students of UOW studied the article as a reading assignment for their project as well as for language development and cultural understanding of Japanese manners. Through online chat with the students of Doshisha University (DU hereafter), the students of UOW gained an immediate response from a real audience and were also able to deepen their knowledge of modern Japanese society and culture from their perspectives and their understanding of the purpose of this class activity. One student of UOW wrote in her assessment report:

Any country has its unique culture so I enjoyed talking about culture. Everyone said that the idea of put-

ting on make-up in the train is not so good. However, I guess Japanese women are very busy so they could not be helped. My chat partner said that it is ok to put on make-up as the train is not a public place. I think it is not her opinion but the young people's.

On the other side, the students of DU were able to see their own culture and manners from a different perspective and had a chance to improve their own skills for expressing their own opinions based on their experiences. One student reported: "This talk taught me that in order to carry successful intercultural communication, English ability is not enough: knowledge of my own culture and values is also important so that we can avoid misunderstanding and stereotypes." Though course contents are different in two courses, online chat provided a common ground for discussion on shared topics.

2. Tool for training in information gathering

A task-based discussion was designed to help the students of DU improve their skills for gathering information on the internet and also catch up with current issues in the world. They were given a task to access websites and choose an online article that would interest the students of UOW. Prior to the online discussion they sent the article of their choice to each member of the group. Everyone needed to read the articles and be ready for discussion. In this way, they were encouraged to take more active roles in the online discussion, creating interesting and meaningful contexts of their own. They had to keep up with the latest developments in the world events and learn to discuss with their chat partners. In the spring semester of 2003, many groups exchanged different articles on the war in Iraq and compared each government's reactions. They therefore gained a third-party perspective on their own country's policy. This kind of online communication practice provided students on both ends with training for computer literacy and opinion formation. Moreover, through this task, the students of UOW had an opportunity to further their social and cultural knowledge of Japan. They also improved their language learning strategies by reading the articles, asking about unknown words and expressions, and also through the exchange of thoughts and ideas with Japanese counterparts.

3. Collaborative learning environment for the formation of a learning community

A major benefit, particularly for the students of DU, who have been so used to homogeneous classroom settings (Hata 2003), is that the students were able to gain an im-

mediate feedback from a student in a different country, which they could have hardly achieved through more conventional language learning methods. As Hicks (2000) summarizes, this can provide the students with contact with the world outside of the classroom and with the means to learn language more effectively than the Japanese traditional language focusing on form and grammar. In addition, online discussion caters to "individual needs by allowing students to work at their own speed, avoid pronunciation problems and read before responding" (Sutherland-Smith 2002, 34). This also creates a more collaborative and less threatening learning environment for Japanese students.

Another benefit of online discussion is that Australians and Japanese can form a language learning community in English and Japanese. This learning experience utilizes the notion that "learning is inherently a social dialogical process in which learners benefit most from being part of knowledge-building communities in class and outside of school" (Jonassen 1995, qtd. in Opp-Beckman 2002, 4). For one task-based discussion, the students exchanged tips for learning foreign languages. Some students also learnt to see their native language from a new perspective by listening to how their chat partners coped with difficulties in learning their language. One student of DU wrote in her assessment of the discussion:

...from my partners' remarks, I discovered how difficult it is to learn Japanese. ...When I said it is easier to write or read English than to speak it, she said it is the same for the Japanese language as well, except Chinese characters. It seems that Chinese characters are very difficult for my partners. Responding to the question, "How do you remember Kanji?", I told them that it is an ideograph, so each character has its meaning. Then they said they found the meanings of Kanji easier to remember than the different readings. It seems more difficult to remember the Japanese reading of Kanji and the Chinese reading of it. I can see it is more difficult to master how to read Chinese characters than to remember the meanings of Kanji. There are thousands of Chinese characters, while there are only 26 letters in the English alphabet. I was surprised at this fact.

Another student of DU wrote:

Through the chat sessions, I came to re-think about my language, Japanese. While I tried to write the right and clear Japanese to them, I realized that even I, who have lived in Japan for 21 years, do not know very well about what the correct and beautiful Japanese is.

It is also beneficial for both Japanese and Australian students to do online chat in two languages, since the chat serves them as meaningful and collaborative interaction between native speakers and non-native speakers. The students gained corrective feedback from their peers and new vocabulary or idioms. It is also a text-based discourse which enables the students to carry discussion without any fear of missing any words: they can just scroll down the screen to see a comment made earlier and view the conversation (Freiermuth 2002). One student of DU wrote that she could feel more comfortable online than in face-to-face conversation as "talking" via the computer screen is slower and that she could understand her chat partners' opinions more clearly and "at the personal level." As Murray (2000) observes, there are features of both oral and written languages in CMC. The students take advantage of the speech-in-writing characteristic to gain new vocabulary or idioms or to ask for the right expression from their chat partners who are the native speakers of their target language. On these occasions, their writing on the screen often includes mixed languages in simplified syntax. In addition, online chat is synchronous communication, by which students can get an immediate reply from their chat partner. One student of DU wrote:

Since you cannot see the person's reactions or gestures and so on, I felt the barrier that comes from the own cultures and the importance of the "words" itself. Grammars are important but in this case, I thought that the motivation of wanting to know each other by using the words you know were important. When the students didn't understand what we were saying they simply asked us. We can do the same thing. There are a lot that we can study from the real spoken language itself and not only from the written texture and grammar. I have enjoyed this way of communicating very much.

4. Opportunity for self-enlightenment

This practice of cross-cultural communication also provided an opportunity for self-development. In the course of online chat sessions, the students on both sides became not only chat partners for language training but also friends. Even though they were talking online with their chat partners a thousand miles away, they felt very close to them. One student of DU reported:

Even though [my chat partners] live thousands of kilometers away from here, we can be easily connected by just entering the chat room. In this room, there is no room between us. I think the most wonderful thing

about chat is that it enables us to feel like *sitting on the same sofa*. [emphasis added]

Thus, online chat becomes no longer a mere tool for language learning as students reflect their personal concerns by sharing similar interests and problems through the interaction with their partners. Generally for 3rd-year and 4th-year college students in Japan, career planning is one of their biggest concerns. In spring semester, senior students are engaged in job hunting, while in fall semester, junior students start to look for their future career. One student said that she was cheered up by exchanging opinions about careers and by observing her chat partner's positive thinking toward his future career.

No doubt the online chat practice has enriched the students' learning, broadened their perspectives, and therefore improved the course design. The following section will summarize key points to conduct a successful online discussion between students in the two different courses by reviewing the practices of our cooperative teaching.

Keys to ongoing success

As previously mentioned, online chatting has been a vehicle for increasing the motivation of students to learn the foreign language and also for their personal development. In addition, online chat has offered added value to each course. Five key points (learner-centeredness, needs assessment, flexibility, communication in target language/native language, and time zone) will be briefly discussed here.

Learner-centeredness

Both instructors value a learner-centered practice in the respective courses. Richards (2001, 117) explains that a learner-centered approach involves educational philosophies that stress "the individual needs of learners, the role of individual experience, and the need to develop awareness, self-reflection, critical thinking, learner strategies and other qualities and skills that are believed to be important for learners to develop." Thus the instructors identify online chat as a tool for making class activities more learner-centered, and, in practice, the online chat has made a great contribution to class design by serving as a tool for collaborative learning and forming a learning community.

Communication in target language/native language

One of the target languages (Japanese or English) is always a language that the participants are currently learning at the respective universities. Therefore, language skills development was a foreseen benefit. Also, the similarity of

the courses, both in humanities, has probably helped most with regard to organizing a learning activity which is beneficial for both parties.

Needs assessment

Needs assessment is important in designing and improving a course. This means that, in order to design an appropriate course, an instructor must know the needs of the students. Ideally, this also helps him/her improve their teaching and create an effective learning environment. Furthermore, in relation to outcomes, needs assessment helps "increase motivation and self-esteem by recognizing students' interests and abilities and valuing their own assessment of what they need to learn" (Robinson and Selman 1996, 23). In reality, it is often difficult to conduct needs assessment and then to meet the needs appropriately due to time constraints and resource scarcity. Online chat practice, however, has helped students' skills development. For example, the students have found it easier to apply what they have learnt in traditional classes when talking to the chat partners.

Good communication and flexibility

Once online chat has its role in a course, it is helpful to be aware of the role in the partner's course and its relationship with other parts of the course in order for both parties to benefit from the chat sessions. Through regular communication between the instructors, each instructor has pursued tasks which are beneficial to both parties and selected topics for discussion, which consequently bring a multiplier effect such as increasing students' motivation and broadening their perspectives. An idea for a discussion topic sometimes arises from a conversation on what the students have done in class prior to a given chat session. Needless to say, instructors have to be flexible to implement such an idea in each course as well as to cope with problems when a computer breaks down.

Time zone

Conducting a chat session was relatively easy in this case as the time difference between Japan and Australia is only one or two hours depending on the season and the region in Australia, while it would be very difficult for either party to do online chat with universities in the United States or in Europe. It has certainly made scheduling of online chat sessions quite easy to fit the timetable of respective classes.

The five factors discussed above have also helped the instructors position online chat effectively in each course.

Hence, our cooperative teaching has brought many benefits to both parties and online chat has been found an effective tool for collaborative language learning.

Discussion

While online chat practice has provided a unique learning environment and brought benefits to the students in the courses, there are issues need to be considered. One such issue is a mismatch between the medium and the technical support for the medium. Mismatches with the medium occur at various levels. Mismatches of computer skills or personalities of students, such as those who might wish to dominate conversation, exemplify this point. It is very important to avoid such mismatches to improve students' satisfaction, motivation, and positive attitudes towards the course. There is a possibility that the conversation could be dominated by those who type fast (McCarthy 1999 and Luke 1996). Such domination over conversation might need to be examined if CMC-related skills are to be developed further. The development of typing skills will become more important for the students of UOW when the online chat session moves to a new site in 2005 where they can type Japanese scripts (Kana, Katakana, and Kanji).

On-going technical support is essential for a successful chat session including maintaining and securing appropriate computers and software. Setting up the site for online activities from different universities or countries in particular would not be possible without such support.

With regard to the acquired language skills, the level of achievement has only been measured by the assessment tasks as the chat interaction is not directly assessed. Thus for future studies, an analysis of actual textual interaction might be useful in order to further understand students' learning behavior in the medium and to improve the course contents.

Finally, as this study is the first attempt to reflect and document our nine-year practice using CMC, it is difficult to determine at this stage whether the successful relationship outlined here was due to the respective course design or the change in the chat setting (i.e. one-on-one to group). With further research it is hoped to explore such issues.

Conclusion

This study demonstrates how online chat between two different courses from two different countries has been successfully continued over nine years and how it has brought benefits to both parties. Four notable roles of online chat

practice developed over the years have been presented: task-based discussion, information collection, formation of learning community, and self-enlightenment. Such roles demonstrated that the use of online chat has enriched the students' learning as well as the courses.

In addition, some key points to a successful and lasting relationship between the two different courses have been identified. The difference in course content has never impeded each course activities; this online practice involving two different courses has enhanced the students' motivations to study the language since the students are required to cooperate online to complete tasks. Moreover, the negligible time difference, good communication between instructors at the two ends and flexibility of the instructors have served to make the cooperative teaching between the University of Wollongong and Doshisha University a success. Thus, online chat has been better positioned in each course, and the practice of chat sessions and the content of respective courses have improved over the years. To better design future tasks, the assessment of language skills development in each session should be further explored.

Lastly, this study has suggested how the medium can be applied in education, and also has presented some ideas about cooperative teaching, collaborative learning and cross-cultural interaction across different curricula. Although some of the key points for a successful relationship mentioned earlier might be peculiar to this particular case, online chat might have a place in the curriculum of foreign language teaching. Having chat partners in a different country and in a different course could be useful in deepening cultural understanding and developing collaborative learning skills.

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References

- Beauvois, M.H. 1992, 'Computer-Assisted Classroom Discussion in the Foreign Language Classroom: Conversation in Slow Motion', *Foreign Language Annals*, vol. 25, no. 5, pp.455-464.
- Cisuentes, L. & Shih, Y.D. 2001, 'Teaching and Learning On-lines: A Collaboration between U.S. and Taiwanese Students', *Journal of Research on Computing in Education*, Summer, vol. 33, no. 4, pp.456-474.
- Freiermuth, M.R. 2002, 'Internet Chat: Collaborating and Learning via E-Conversations', *TESOL Journal* 11.3, pp.36-40.
- Hata, M. 2003, 'Literature Review: Using Computer-Mediated

- Communication in Second Language Classrooms', *Osaka Keidai Ronshu* 54.3, pp.115-123.
- Hicks, S.K. 2000, 'Using Computer-Mediated Communication in a Writing and Speaking English Class to Enhance the Language Learning Experience', *Kyôto Tachibana Joshi Daigaku Gaikokugo Kyôiku Kenkyû Sentô Kiyô* 9, pp.59-69.
- Hiltz, S.R. 1986, 'The "Virtual Classroom": Using Computer-Mediated Communication for University Teaching', *Journal of Communication* 9, pp.95-104.
- Iwasaki, J. & Oliver, R. 2003, 'Chat-Line Interaction and Negative Feedback', *Australian Review of Applied Linguistics* 17, pp.60-73.
- Kitade, K. 2000, 'L2 Learners' Discourse and SLA Theories in CMC: Collaborative Interaction in Internet Chat', *Computer Assisted Language Learning* 13.2, pp.143-166.
- Luke, C. 1996, 'ekstasis@cyberia', *Discourse*, vol. 17, no. 12, pp.187-208.
- McCarthy, B. 1999, 'Integration: the sine qua non of CALL', *CALL-EJ Online*, vol. 1, no. 2 September (www.lerc.ritsumei.ac.jp/callej/index.html).
- Murray, D.E. 2000, 'Protean Communication: The Language of Computer-Mediated Communication', *TESOL Quarterly* 34.3, pp.397-421.
- Opp-Beckman, L. 2002 'Africa Online: A Web-and Content-Based English Language Teaching Course', *TESOL Journal* 11.3, pp.4-8 and pp.21-26.
- Ramzan, Y. & Saito, R. 1998, 'Computer-Mediated Communication in Foreign Language Learning: A Case of The Students of Japanese', *The 15th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education, ASCILITE '98 Conference Proceedings*, Wollongong. pp.585-592.
- Richards, J.C. 2001, 'Planning Goals and Learning Outcomes', *Curriculum Development in Language Teaching*, CUP, Cambridge. pp.112-144.
- Robinson, J. & Selman, M. 1996, 'Assessing Needs and Negotiating to Curriculum', *Partnerships in Learning: Teaching ESL to Adults*, Pippin, Toronto. pp.22-35.
- Sutherland-Smith, W. 2002, 'Integrating Online Discussion in an Australian Intensive English Language Course', *TESOL Journal* 11.3, pp.31-35.
- Walther, J.B. 1997, 'Group and Interpersonal Effects in International Computer-Mediated Collaboration', *Human Communication Research* 23.3, pp.342-369.

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チャットを媒体とした二カ国間における 異文化コミュニケーション・外国語学習の新たな展開

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高度に情報化された現代社会におけるコンピュータ技術の発達と、社会的構成主義を中心とした外国語学習理論の変遷は、近年の外国語学習形態を大きく変えてきた。従来からの教室内での対面授業や文法・語彙・読解中心の反復学習だけではなく、インターネットを用いて、教室やあるいは国を超えたサイバー空間でのインタラクティブな学習環境を用いて、新たな外国語学習や異文化コミュニケーションの展開が生まれてきたのである。本論考では、異文化理解や外国語学習のツールとしてのCMC実践についての先行研究を敷衍しながら、9年間にわたって日豪間の2大学で実践してきた遠隔合同授業を報告し、それぞれのカリキュラムにおける位置づけとその有効性を検証する。二つの言語を使つてのチャットは、単なる外国語学習のツールにとどまらず、学習者の異文化理解や自国文化に対する関心の深化、さらにサイバー空間が国を超えて外国語学習者の共同体となることによって、知識を共有化し、相互の学習意欲を増進させるという多角的展開を可能にするものである。

キーワード

チャット、協同学習、遠隔合同授業、異文化コミュニケーション、異文化理解、CMC

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