An Evaluation of Text-Chat/ Voice in the L2 Classroom

Anthony Young
Sian Edwards
Aichi University, Aichi

Reference Data:

Young, A. & Edwards, S. (2013). An evaluation of text-chat / voice in the L2 classroom. In N. Sonda & A. Krause (Eds.), *JALT2012 Conference Proceedings*. Tokyo: JALT.

In this research project we investigated the benefits of Synchronous Computer-Mediated Communication (SCMC) through negotiated learning tasks. For this purpose, 20 volunteer students completed a number of negotiated task-based learning activities using Skype text-chat and Skype voice. The benefits of these SCMC media were then explored by examining the frequency of language related episodes (LREs), "instances of collaborative dialogue" (Swain, 2001), as well as by looking at the students' own feedback. From this data it was concluded that Skype voice was advantageous in promoting listening and pronunciation skills as well as negotiation of meaning and production of modified output. Text-chat, on the other hand, was more conducive to the study of grammatical and lexical accuracy while also focusing on communication skills.

本研究は、交渉的な学習タスクによる「コンピューターを用いた同時コミュニケーション（Synchronous Computer-Mediated Communication: SCMC）」の効果を検証したものである。この目的のために、20人の学生がチャットによる筆記とスカイプによる発話に基づく数々の交渉的な学習タスクに自主的に参加した。そして質問紙や討論による学習者自身の印象に加え、これらのSCMCメディアの直接／間接的な効果が、Swain (2001)が定義するところの「言語関連事象（Language related episodes: LREs）」の「共同対話」の分析により認められた。この結果より、スカイプは、意味交渉や修正されたアウトプットの産出と同様、聴解と発音技能の向上に効果があることがわかった。一方チャットは、コミュニケーション能力に注視しながらも、文法的／語彙的な正確さに資することが確認された。

Advancements in technology today provide learners with opportunities to interact in online environments similar to face-to-face communication. This has led to a growing interest in the ways computer networks can be utilized for second language acquisition purposes. In recent years, research into Synchronous Computer-Mediated Communication (SCMC) technologies has explored in greater depth how different configurations of telecollaboration, from real-time text-chatting to videoconferencing, can impact and have impacted on students' language development. A smaller number of studies within this paradigm (Belz, 2006; Lee, 2006; Sotillo, 2005) have also focused on the value of having students actively reflect on language form for linguistic development. Data have shown these new media forums appear to complement new approaches to language teaching, in which students are seen as active agents, collaborating in their own learning process (Warschauer, 2000).

Theoretical Framework

Input to Output

In the theory of Comprehensible Input, Krashen (1982) argued that for input to be available for acquisition, it must be comprehensible to learners. According to this theory, learners improve and progress along a natural order when they receive second language input that is one step beyond their current stage of linguistic competence. In response to this, however, Swain (1985) proposed that while input was fundamental to the process of acquiring new language, it alone would not be sufficient for acquisition to take place. She claimed that in order for L2 acquisition to occur, the learner's own experimentation with the new language was also essential. This notion went on to be known as the Comprehensible Output theory. According to Swain (as cited in Farrokhi & Gholami, 2007) output serves three main functions: to prompt learners to test hypotheses, to allow them to notice gaps in language use, and to act as a springboard for metalinguisitic awareness.

LREs

These instances of "noticing" language went on to be defined by Swain (2001) as Metatalk or Language Related Episodes (LREs); terms she used interchangeably. LREs describe a type of communication that is centered on conscious reflection of language use. They are considered to be collaborative dialogues in which speakers are engaged in problem solving and knowledge building together (Swain, 2000). Citing Swain, Ismail and Samad (2010) explained that through LREs "learners may (a) question the meaning of a linguistic item; (b) question the correctness of spelling / pronunciation of a word; (c) question the correctness of a grammatical form; or (d) implicitly or explicitly correct their own or others' usage of a word, form or structure" (p. 98). Although it cannot be guaranteed that acquisition will take place in the presence of LREs, it can be argued that they are an all-important first step.

Research Project

Research Questions

Despite a number of studies having been done on the benefits of text-chat, very few studies have compared the unique qualities of text-chat to voice. Therefore, in response to new opportunities afforded by advancing online communication technologies, a comparative investigation was undertaken into the perceived and provable benefits of these media with respect to second language uptake. This comparative study sought to answer the following research questions:

1. Which medium (voice or text-chat) is more effective for making students reflect on language form?
2. Which medium do students feel is more beneficial to their English language development?
3. What are the benefits of each medium?

Participants

The participants of this study were 20 Japanese university students, aged between 19 and 22. They were highly motivated individuals, ranging from mid-beginner to lower-intermediate levels, who participated in a voluntary capacity.

SCMC

The software used for this comparison study was Skype. Skype is a software application that allows users to chat over the web via text, voice, or live video. It was used in this research project for its versatility, as it allowed participants to use the same technology for both aspects of the comparison, as well as for its

ease of use and the participants' familiarity with it. For the purposes of this project, video was not used when doing the Skype voice activities as it was deemed to be too similar to face-to-face interaction.

Procedure

The participants were allocated partners to work with for the duration of the study. Over a period of eight sessions of 1 hour each, they completed a series of negotiated task-based activities using both Skype voice and text-chat.

Reasoning-Gap Tasks

Altogether six tasks were designed for the project, to meet the following criteria: to have students negotiate meaning, communicate about form and content, and produce a final product. Reasoning-gap tasks were selected for this purpose as they are effective in promoting negotiation, as well as providing intrinsic support to learning outcomes. Citing Prabhu, Ismail and Samad (2010) described reasoning-gap tasks as tasks which require learners to derive "some new information from given information using practical reasoning" (p. 90) to formulate their own meanings.

For this project the goal of the tasks was to have participants collaboratively write stories using their "best" English. For this purpose each participant was given a worksheet with a set of three pictures on it; partners had two pictures that were the same and one that was different. The first part of the task was to identify the disparate pictures. The second part of the task was then to describe the pictures and order them into a story sequence. The third part of the task involved writing the story. A requisite of the task was that participants had to write down exactly the same sentences (including the same spelling) on their own worksheets. Over the duration of the project participants completed three tasks each for text-chat and voice. The use of dictionaries was permitted.

Data Collection and Analysis

Data Collection Method

The frequency of LREs was used as a criterion to determine which media (voice or text-chat) was the most effective for making students reflect on language.

For the text-chat component of the project, participants copied their communication transcripts to Word documents. For the voice component, the software *Audacity* was used to record the sessions, which were later transcribed. The number of LREs was then counted to get an overall comparison between the two media.

Initial LRE Coding

LREs were identified and coded according to two generalized categories proposed by Swain (2001) to indicate general patterns: *Lexis-Based LREs* and *Form-Based LREs.*

Lexis-Based LREs

Learners search for lexical items or choose from among competing lexical items.

Example:

Student 1: vacum > vacuum cleaning?

Student 2: maybe… vacuum cleaner

Student 1: lol yes!

Form-Based LREs

Learners focus on aspects of English morphology, syntax, or discourse.

Example:

Student 1: run? ran?

Student 1: which is the past tense?

Student 1: sorry i forgot…

Student 2: past tense is ran…?

Comprehensive LRE Coding

The transcripts were later coded again based on Zeng and Takatsuka's (2009) more cogent LRE classifications, to more explicitly understand the characteristics of the LREs associated with each media. Table 1 is the list of classifications used, including examples from participants' transcripts.

Table 1. LRE Classifications With Examples

Classification	Example
Inviting/stating an opinion	Student 1: In my opinion, he want to go down to ground but he cannot do, so he hit the balloon.
Self/partner correction	Student 1: oh, so the man shot the balloons by hisself? Student 2: yeah, he shot the ballons by himself.
Seeking confirmation/Checking information	Student 1: A woman brought a vacuum-cleaner in a panic. Student 1: how do you think?
Suggesting an improvement/alternative	Student 1: cleaning machine is. . . "a vacuum-cleaner" in English.
Requesting assistance/clarification/Giving an explanation	Student 1: Sorry, I don't know "get stuck" means. In this case that means the food stay in one place??
Code switching	Student 1: hahaha^^because that day was Osyogatu! Student 2: an old man ate moti because that day was a new year.

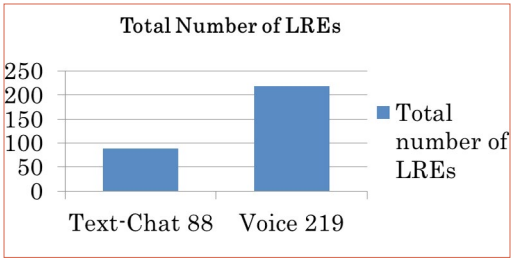

Figure 1. Total Number of LREs

The overall frequency of LREs experienced on Skype voice was over twice as often as on text-chat (see Figure 1). From these figures it can be initially inferred that voice afforded participants considerably more opportunities to reflect upon their language use. However, this was surprising as the numbers ran contrary to expectations based on the assertions in previous research. Smith (2004), Yamada (2009) and Zeng and Takatsuka (2009) advocated text-chat's slower rate of communication and

visual evidence of utterances as promoting grammatical awareness, which led to the assumption that it should have elicited more LREs than did voice.

Form- and Lexis-Based Results

The percentage breakdown of LREs based on lexical and form issues was not vastly different for the two media (see Figures 2 & 3). However, we should consider the following two results: (a) Across both media, participants appeared more focused on form-based issues than lexical issues; and (b) there were more lexical issues for voice than text-chat. The reason for this disparity may be directly linked to the different speeds of communication that are afforded by each media. The slower rate of communication of text-chat was beneficial in allowing participants time to check lexical items by using their dictionaries, thus producing a situation where lexical issues could be resolved individually, without the need for negotiation. This was confirmed by the participants' own comments relating to the use of text-chat: "I felt I could communicate more as I had time to look things up in my dictionary." The tasks on voice, however, were done at a faster pace and so participants felt more pressure to respond quickly and to not take such long pauses to look things up themselves. It was more convenient to confer with their partner.

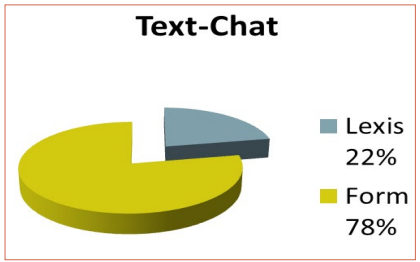

Figure 2. Text-Chat: Lexis vs. Form

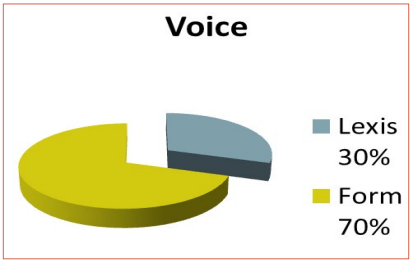

Figure 3. Skype Voice: Lexis vs. Form

The more in-depth breakdown of LREs revealed a greater range of differences between the media (see Figures 4 & 5). In the category *Inviting/Stating an opinion*, the percentage of text-chat LREs was almost double that of voice LREs, 11% and 6% respectively. This may have been indicative of the relative anonymity of text-chat, which, according to Kern (1995), encourages equal participation and reduces anxiety—sentiments which were echoed by the project participants: "I didn't feel so much pressure so it was fun to communicate this way."

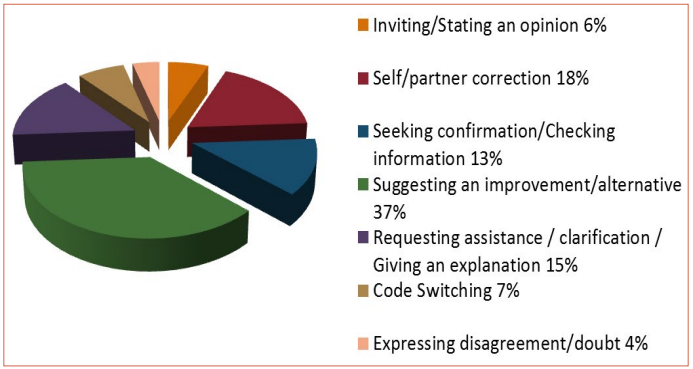

Figure 4. Detailed Voice LRE Breakdown

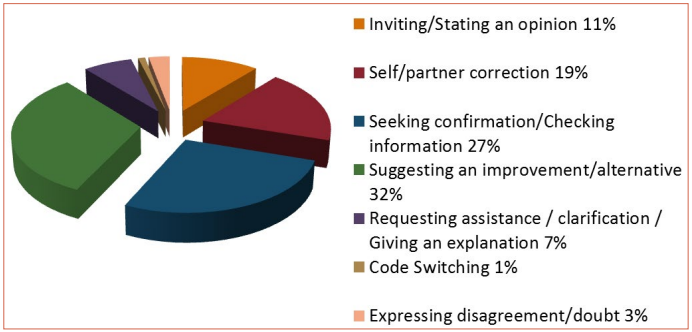

Figure 5. Detailed Text-Chat LRE Breakdown

In the category *Seeking confirmation/Checking information*, the percentage of text-chat LREs was more than double that of voice LREs, 27% against 13%. Participants appeared to be more aware of, and gave more thought to, the language they were producing, which precipitated the desire to confirm and check what was written. That participants were conscious of this higher awareness can be seen in one participant quote: "As I put my words into sentences I found I paid more attention to grammar."

In the category *Requesting assistance/clarification/Giving an explanation*, the higher percentage of LREs fell to voice, accounting for 15% of its overall total as compared to only 7% of the text-chat total. From these results it was inferred that, of the two, voice appeared to be more complex. Having to process more information in a shorter amount of time, without the visual benefit of having a record of their typed utterances (as afforded in text-chat), both listening skills and memory were needed to complete the tasks. By this rationale it was concluded that in addition to the complexity of the project tasks, using voice is likely to have accounted for a greater need to request clarification and give explanation. Citing Skehan, Ismail and Samad (2010) asserted:

> Human beings have a limited capacity to process information, and as a result, task content and language accuracy are in competition with each other for a learner's attention. Thus more complex tasks will demand more attention on content, resulting in less attention given to language use. (p. 89)

The requests on the whole tended to be associated with pronunciation, lexical comprehension, and meaning, which explains the higher percentage of lexical-based LREs in voice and supports the notion that participants had less time to check dictionaries and so were more inclined to ask for assistance under the voice conditions.

In the *Code-switching* category, voice had a higher percentage of LREs with 7% of the total as compared to only 1% for text-chat. An explanation for this may lie in the ease and immediacy of changing from one language to another when speaking. The deliberate nature of text-chat meant participants took the time to search for meanings and adhering to English appeared more manageable. One participant comment regarding voice endorses this idea, "I found it easy to switch to Japanese to explain difficult things."

Answers to Research Questions

Research Question 1

This question asked, "Which medium (voice or text-chat) is more effective for making students reflect on language form?" Although the number of LREs is greater for voice than for text-chat, it appears that different types of LREs were predominant in each medium. In voice exchanges, participants engaged in a higher frequency of *Lexis*, *Code-switching*, and *Requesting assistance/clarification/Giving an explanation* LREs, particularly in reference to meaning, with pronunciation playing an important

role. Participants were paying attention to language but with an emphasis on content and meaning as opposed to form. As one participant emphasized about voice, "I ended up not really thinking about grammar so much," emphasizes this. Whereas in text-chat, participants appeared to focus more on language production and form, as suggested by the higher number of LREs for *Seeking confirmation/Checking information* and *Inviting/Stating an opinion*. These results echo those of Jepson (2005):

> This study suggests that although text chat is the more widely available and most studied form of chat, voice chat offers an environment in which learners are more apt to negotiate for meaning. Voice chats in this study generated a number of repair moves, specifically negotiation of meaning . . . which was significantly higher than the number in text chat. (p. 92)

It was also noted that LREs in text-chat took much longer to resolve, which leads to the question: Does the amount of time spent on individual LREs actually result in higher uptake of the language point under discussion? This, however, goes beyond the scope of the current study, and may be an avenue for further research.

Research Question 2

This question asked, "Which medium do students feel is more beneficial to their English language development?" Upon conclusion of the project, participants completed questionnaires (see Table 2) in an endeavor to answer this question. The questionnaire elicited participants' perspectives (on a 5-point rating scale) on the perceived benefit to SLA of each medium, the perceived ease of task completion in each medium, and participant preferences for the use of each medium. Participants were also asked to comment from their own experience on the advantages and disadvantages of each medium. The questionnaires were initially written in Japanese to enable the participants to answer comprehensively and subsequently translated by the researchers for the purpose of this paper.

Table 2. Questionnaire

Questions	Rating scale
Rate how connected (close) you felt to your partner while using Text-Chat / Skype Voice.	1 Not close at all – 5 Very close
Rate how comfortable you were using Text-Chat / Skype Voice to communicate in English.	1 Uncomfortable – 5 Comfortable
Rate how much you noticed grammatical mistakes in your own or your partner's sentences.	1 Not at all – 5 A lot
Rate how much you thought about English grammar while using Text-Chat / Skype Voice.	1 Not at all – 5 All the time
Rate how much time you had to think about what you wanted to say when using Text-Chat / Skype Voice.	1 No time – 5 Lots of time
Rate how much you felt using Text-Chat / Skype Voice was beneficial to do language learning activities.	1 Not beneficial – 5 Very beneficial

Questionnaire Results

In response to the request, "Rate how much you felt using text-chat/voice was beneficial to language learning activities," participants were very positive towards the use of both media (see Figure 6). However, voice was rated slightly higher than text-chat. This could be explained by the closeness of voice to face-to-face communication, with its emphasis on listening, speaking, and fluency skills, which the participants greatly valued. One participant comment, "It was good because I had to be careful of my pronunciation," highlights the importance given to verbal exchanges.

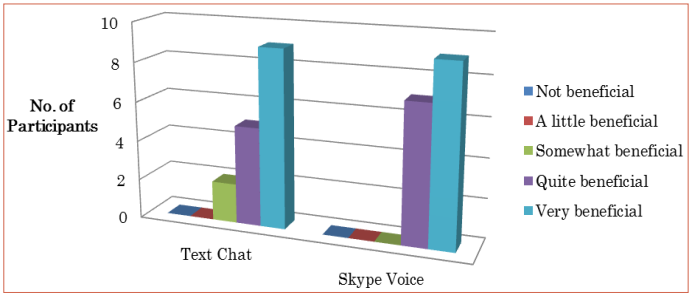

Figure 6. Participant Ratings of Benefits of Using Text-Chat / Skype Voice

To the request, "Rate how much you noticed grammatical mistakes in your own and your partner's sentences," participants reported noticing much more when using text-chat as compared to voice (see Figure 7). From a pragmatic point of view, the reduced speed of communication, which afforded more time for questioning and reflection, and the fact that utterances were recorded on the screen, made it likely that mistakes were easier to see in text-chat. This is relevant to being beneficial, because although participants may not have been consciously aware of the fact, the act of noticing gaps in language knowledge, as suggested by Schmidt (1990), may be a catalyst for SLA.

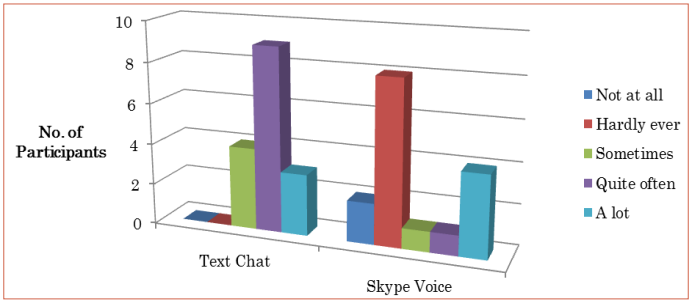

Figure 7. Participant Ratings of Noticing Grammatical Mistakes in Text-Chat / Skype Voice

When asked to rate how comfortable they were using text-chat or voice to communicate in English, participants on the whole felt more comfortable using text-chat, with many appreciating the slower pace of communication (as shown in Figure 8). The following participant quote illustrated this point: "I liked having more time to think about what I wanted to say before I responded."

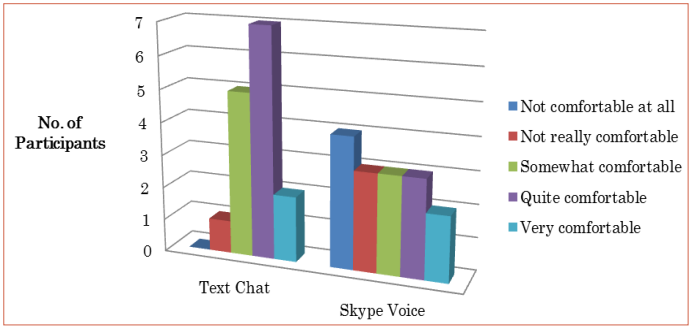

Figure 8. Participant Ratings of Comfort When Using Text-Chat / Skype Voice

In response to the request, "Rate how connected (close) you felt to your partner while using text-chat / Skype voice," participants felt that voice was more conducive to connectedness (see Figure 9). Citing Lomicka and Lord, Yamada (2009) suggested that "social presence enhances the interaction between learners, which, in turn, affects learning performance" (p. 822) and so this must also be taken into consideration when examining the unique benefits of each medium.

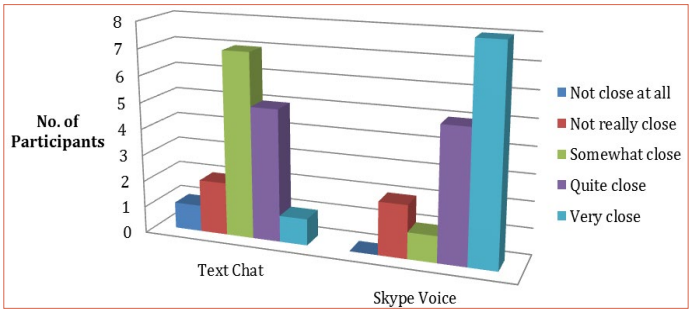

Figure 9. Participant Ratings of Connection Felt When Using Text-Chat / Skype Voice

Research Question 3

This question asked, "What are the benefits of each medium?" The benefits of the respective media were determined through a combination of observation of participants and final outcomes, as well as the detailed LRE breakdown and participant questionnaires. The main benefits of each medium can be seen in Table 3.

Table 3. Summary of Benefits

Text-Chat	Voice
The promotion of consciousness of grammatical and lexical accuracy	High dependence on listening skills, particularly as gestures and facial expressions cannot be used to convey meaning
The ability to study both form and communication skills within the same task	Accurate production and pronunciation of English is required
The ability to check utterances before sending them enhanced language confidence and created a low stress environment	A greater feeling of social presence
The sense of anonymity enhanced participants' abilities to correct partner mistakes, give opinions more willingly and foster an environment of equal participation	Clarification requests pushed students to produce modified output
Less use of native language, with more time afforded to check meanings and words	The rapid speed of communication was motivating
The collaborative nature of the activity led to learner output (in terms of quantity of written work) being sizeable	Similar to face-to-face communication (use of fillers)
Participants stayed on-task due to the positive pressure not to leave their partners waiting.	Participants stayed on-task due to positive pressure of a partner waiting for responses or input.

Pedagogical Implications

There are several pedagogical implications to the study. The results show that use of SCMC within the class should be tailored to specific teaching objectives to maximize student learning opportunities. Specifically, voice was found to be advantageous in promoting listening and pronunciation skills as well as for negotiation of meaning and production of modified output. Text-chat, on the other hand, was more conducive to the study of grammatical and lexical accuracy while also focusing on communication skills.

Through the study of participant LREs, the gaps in students' language knowledge became apparent, particularly in those LREs which remained unresolved. Specific knowledge of these gaps could be used by teachers for future lesson plans. This knowledge would allow teachers to tailor classes very precisely to student language levels in keeping with Krashen's (1982) Comprehensible Input theory.

Conclusions

Within the theoretical framework, this study set out to compare the benefits of voice and text-chat in relation to SLA. The results indicate that both text-chat and voice are beneficial to SLA, particularly in correspondence with negotiated learning tasks. Participants were receptive to language study using both types of SCMC and were able to identify positive benefits when using both media.

It should be acknowledged, however, that the research was conducted under some limitations. The purview of the research was small as only 20 students participated. Also, although participants used a number of LREs in both media, the scope of this research did not allow for testing the retention level of the knowledge gleaned from experiencing such LREs. Further study could be conducted to investigate the likelihood of retention of the knowledge gained and what the optimum conditions for LRE knowledge retention are.

Bio Data

Anthony Young has been teaching for 12 years in Japan and holds a MEd in Second Language Learning. He is currently an assistant professor in the Literature Department at Aichi University. His pedagogical interests include autonomous learning, blended learning environments, and negotiated task-based instruction.

Sian Edwards is an assistant professor in the Faculty of International Communication at Aichi University. She has been teaching in Japan for 9 years in a variety of contexts. She has been an active member of JALT since 2007, and her current research interests include student motivation, autonomous learning, and CALL.

Acknowledgement

This paper is a revised version of a paper that first appeared in the Aichi University Journal 言語と文化, published in June 2012.

References

Belz, J. (2006). At the intersection of telecollaboration, learner corpus analysis, and L2 pragmatics: Considerations for language program direction. In J. Belz & S. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 207-246). Boston: Heinle & Heinle.

Farrokhi, F., & Gholami, J. (2007). Reactive and preemptive language related episodes and uptake in an EFL class. *The Asian EFL Journal, 9*(2), 58-92.

Ismail, L., & Samad, A. (2010). The effects of tasks on language related episodes (LREs) during focus-on-form instruction. *Language Education in Asia, 1*(1), 87-98.

Jepson, K. (2005). Conversations—and negotiated interaction—in text and voice chat rooms. *Language Learning and Technology 19*(3), 79-98.

Kern, R. (1995). Reconstructing classroom interaction with networked computers: Effects on quantity and quality of language production. *Modern Language Journal 79*, 457-476.

Krashen, S. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon Press.

Lee, L. (2006). A study of native and nonnative speakers' feedback and responses in Spanish-American networked collaborative interaction. In J. Belz & S. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 147-176). Boston: Heinle & Heinle.

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics 11*, 129-158.

Smith, B. (2004). Computer-mediated negotiated interaction and lexical acquisition. *Studies in Second Language Acquisition*, *26*, 365-398.

Sotillo, S. M. (2005). Corrective feedback via Instant Messenger learning activities in NS-NNS and NNS-NNS dyads. *CALICO Journal, 22*, 467-496.

Swain, M. (1985). Large-scale communicative language testing: A case study. In Y. P. Lee, A. C. Y. Fok, R. Lord, & G. Low (Eds.), *New directions in language testing* (pp. 35-46). Oxford: Pergamon Press.

Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 97-114). Oxford: Oxford University Press.

Swain, M. (2001). Examining dialogue: Another approach to content specification and to validating inferences drawn from test scores. *Language Testing, 18*, 275-302.

Warschauer, M., & Meskill, C. (2000). Technology and second language teaching. In J. W. Rosenthal (Ed.), *Handbook of undergraduate second language education* (pp. 303-318). Mahwah, NJ: Erlbaum.

Yamada, M. (2009). The role of social presence in learner-centered communicative language learning using synchronous computer-mediated communication: Experimental study. *Computers and Education*, *52*, 820-833.

Zeng, G., & Takatsuka, S. (2009). Text-based peer-peer collaborative dialogue in a computer-mediated learning environment in the EFL context. *System, 37*, 434-446.