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Exploring L2 Learner Accuracy and Learner Participation in CMC Discussions

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The present study explores EFL learners' performance in the peer-interactive computer-mediated communication (CMC) tasks with respect to learner accuracy and learner participation. The research questions are: 1) how the CMC tasks affect participants on improving their linguistic errors, and 2) how equally participants participate in the CMC task. To address these questions, fifty-five university students in Korea participated in the study, completing asynchronous and synchronous CMC activities. The analysis of participants' written essays and chat discussions indicated that in terms of accuracy, participants showed a tendency to produce more accurate lexical outcomes after having a chance to work with the CMC tasks, while there was no statistically significant group difference in spelling and grammatical errors. In terms of learner participation, the results revealed that participants were engaged in chat discussions at a relatively equal level. The findings from this study suggest the advantage of using CMC tasks for improving learner accuracy, as well as the importance of well-structured activities for enhancing the effectiveness of CMC tasks on EFL learners' learning. Pedagogical implications and limitations of this study are also discussed.

[CMC/L2 learner accuracy/L2 learner participation]

I. INTRODUCTION

The importance of input and output has been highlighted in the recent second language (L2) acquisition theory, and many researchers have agreed that an ideal task for teaching L2 could be one providing opportunities for L2 learners to receive input and produce output through interactions (i.e., de la Fuente, 2002; Ellis & He, 1999; Gass, Mackey, & Pica, 1998; Long, 1996 ; Swain, 1995). As one of educational tools enabling learners' interactionally modified input and output, it has been argued that computer-mediated

communication (CMC) has greater advantages over face-to-face activities. The advantages of using CMC are 1) a greater opportunity for a more varied type of interaction than a traditional L2 classroom, such as learner-learner interaction at the same or different levels, one-to-one interaction, or many-to-many interaction (Kitade, 2000; Warschauer, 1997); 2) flexibility in time and place constraints (Kamhi-Stein, 2000); 3) noticing and correcting errors (Beauvois, 1997; Han 2006; Kelm, 1996; Kern, 1995; Kitade, 2000); 4) an increased amount of production (Blake, 2000; de la Fuente, 2003; Hwang, 2008; Pellettieri, 1996; Salaberry, 2000); 5) clarification of meaning and form through collaborative group work (Perez, 2003; Salaberry, 2000); and finally, 6) the increased learners' motivation to language learning (Adair-Hauk, Willingham-McLain & Youngs, 2000).

While advantages of CMC have been stressed in the literatures, some challenges to the use of CMC in a language class have been identified. One of major concerns is involved with how to ensure that the participants produce the desired target language forms correctly when interacting with peers in CMC environment. L2 learners have often been found to repeatedly produce incorrect forms during peer CMC discussions, and the result is that the participants are exposed to defective input from peers (Sotillo, 2000; Tu, 2000). In particular, when L2 learners are not yet able to map out their linguistic errors, they tend to simply imitate incorrect forms that they observe. Such defective input could hinder L2 learners' development of target forms, and may sometimes lead to what is called fossilization (Sotillo, 2000).

Another concern is related to one that there could be a possibility that not all participants benefit from CMC tasks. Sometimes low-proficiency learners have little or nothing new to share with others, and when there are time constraints, such learners are not provided enough of a chance to interact with peers and to generate the desired target forms (Foster, 1998; Lou, Abrami & Apollonia, 2001). These learners, in turn, tend to remain left or to lose track unless they have strong motivations to participate in the activity (Tu, 2000). Given that equal participation can be one of great advantages of using CMC in a language classroom, a further examination of how multiple-level L2 learners actually interact in the CMC mode is suggested.

Considering possible advantages and disadvantages in using peer-interactive CMC tasks discussed above, this study aims to examine the following questions:

1) Are there any differences identified between the CMC group and the face-to-face group in terms of the degree of errors?
2) Are there any differences identified between the CMC group and the face-to-face group in terms of the kind of errors?
3) Do participants participate equally in group activities during CMC discussions?

II. BACKGROUND

It has been argued that peer-interactive learning, which is widely recognized as one of the most promising practices in the field of language education, can offer multiple benefits for L2 learners to perform the language tasks for: acquiring a vocabulary to articulate their ideas efficiently through interactions and negotiations (Peregoy & Boyle, 1997), discovering solutions to linguistic problems (Reid & Powers, 1993), reflecting their own performance with feedback from peers (Holt, Chips & Wallace, 1991), and most importantly, finding stable and supportive environments for language learning by experiencing diverse perspectives (Smagorinsky, 2002).

Such advantages of peer-interactive learning can be fully prompted by CMC tasks. First, a considerable amount of studies have shown that CMC activities have potential benefits for L2 learners by increasing learners' notice on form and meaning of the target language. For example, Kitade (2000) showed a great tendency toward self-correction of lexical errors by noticing and recasting them during participants' synchronous chat sessions. From this finding, Kitade argued that a text-based interaction on CMC enables L2 learners to correct errors relatively easily when compared to face-to-face interaction. Blake (2000) achieved a similar finding: in his study, participants easily noticed the gaps in their interlanguage by negotiation, explicit correction, and assistance from peers in synchronous CMC discussion. Blake suggested that the electronically written form of CMC can give students additional opportunities to notice and reflect their language use in the messages they compose and read. Kelm (1996) also suggested that one of salient features of CMC tasks is the large percentages of questions and requests for information that accompany the comments from the learners. He argues that this expansion type of feedback can be a model for peers' output, creating a chance for learners to clarify and modify the message they have produced.

While previous studies have provided extensive support for the use of CMC, there have been some concerns about potential misguides from the learner-oriented CMC tasks. For example, L2 learners have often been found to repeat misusing lexical or syntactical forms during peer interaction, which might result from inadequate linguistic knowledge or insufficient time to prepare for their output. In other words, when L2 learners have no solution to their linguistic errors, or not sufficient time for monitoring their production, they tend to simply rely on others for ideas and repeat incorrect forms that they encounter during CMC interactions. Sotillo (2000) has argued that malformed sentences and inaccuracies evidenced in many of CMC discussion imply that CMC discussions may not necessarily guarantee successful achievement of grammatical or lexical competence. Furthermore, such defective input could prevent learners from noticing and producing correct outcomes with the chances of errors being fossilized. Thus, it must be cautioned

that peer-interactive CMC tasks may not easily create situations where using target morphological or syntactical forms were triggered, even after a long period of exposure to the CMC mode.

Another concern regarding using peer-interactive CMC tasks is that not all participants benefit from it. Sometimes, learners who do not have sufficient linguistic knowledge or low motivation for tasks tend to remain silent during CMC tasks. For instance, Tu (2000) argued that synchronous CMC mode might create a threatening atmosphere for learners due to its time constraint. Also Beauvois (1997) and Kamhi-Stein (2000), and Lou, Abrami and Apollonia (2001) suggested that sometimes CMC mode easily creates situations where one person dominates the discussion environment especially when tasks fail to address multiple levels of L2 learners. These reports imply that peer interaction through CMC does not always yield increased benefits for all participants even though expression equality has been considered one of advantages of using CMC in a language classroom (Beauvois, 1997).

To minimize such a potential misguide of CMC tasks, 'well-designed' CMC tasks have been emphasized in the previous studies. The 'well-designed' CMC tasks can be described as 1) a task that the enables all participants to equally supply and receive information (Blake, 2000; Salaberry, 2000), 2) a task that creates the minimal negative effects that can be possibly caused from learner-learner interactions (Kern, 1995; Kitade, 2000), 3) a task that facilitates the production of input, output, and negotiated interaction by requiring both request and supply of information (Lou, Abrami & Apollonia, 2001). In particular, de la Fuente (2003), highlighting an importance of a well-designed task for making CMC an optimal medium for L2 development, pointed out that information-gap or paired activities, might be more conductive to create conditions for the processes leading to intake, which merges to comprehensible input, to take place.

III. METHOD

1. Participants

The subjects were fifty-five (N=55) university students taking in a three-hour-credit English reading course at one of the universities in Korea. The subjects belonged to two intact classes, each consisting of twenty-seven (N=27), and twenty-eight (N=28) students, respectively. Students in each class were mostly juniors majoring in English Language. All students in Class A were assigned to the Offline Group and students in Class B were assigned to the Online Group. To ensure that there was no significant difference in English proficiency between the two classes, participants' scores from the practice TOEIC test,

which was conducted when this study started, were compared. It was confirmed that the mean scores of two classes (Class A (M=580.20), Class B (M=571.06)) were similar on average ([F(1, 54)=.168, p<.05]). The two classes were taught by the same instructor with the same text during the semester. However, while Class A participated in a three-hour face-to-face class, Class B was asked to participate in a blended learning course, consisting of a two-hour regular class period and an one-hour lab period. That is, participants in Class B met in the computer-equipped lab for one-hour class period every week during the semester, and conducted the web-based activities relevant to the reading topic of the week, in addition to face-to-face discussions in regular two-hour classes. The reading topics varied from drama reviews to political issues, and the class had four topics covered before the study began.

2. Tasks and Procedures

The tasks consisted of a total of four different kinds of tasks regarding the topic, 'the same sex marriage.' All of participants completed a series of tasks in regular classes or as out-of-class assignments over a three-week period. The materials and tasks presented to the two groups all involved the same topic and same contents, but the ways delivered to participants were different depending on the learning conditions. The interval between tasks was: 7 days between the task 1 and 2, 2 days between the task 2 and 3, and 7 days between the task 3 and 4. The instruction and performance mode of each task are the followings:

1) Task 1: Class Reading

Participants in both Class A and B read an introductory one-page article about the topic, 'same-sex marriage' in a regular two-hour class. The instructor explained vocabularies and terms to ensure participants' understanding of the article. This task was carried out to provide background knowledge of the topic with participants.

2) Task 2: Short-Answer Questions

(1) Offline Group

Each student was given one of four articles covering a different perspective on the topic. These different articles were randomly distributed to the students with each of them being asked individually to read by next class time as homework. Next class period, participants were arranged in a group, based on the article they had read. For each article, six or seven participants were arranged to be in the same group, and they had a group discussion to find

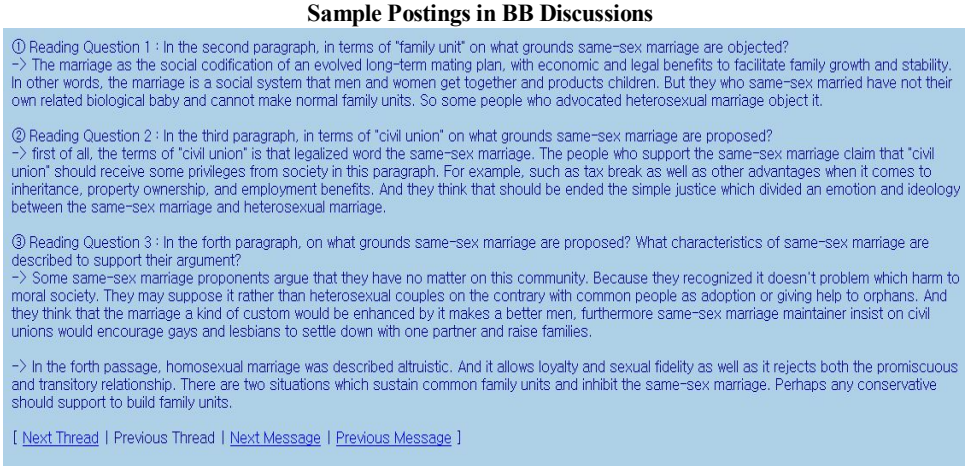
the answers to two or three comprehension questions on a reading. This task was carried out to provide an opportunity for participants to have a good command of not only terms and vocabularies but also further understanding of the reading by comparing the other participants' solutions of the issue.

(2) Online Group

Like the Offline group, each student was given one of four articles covering a different perspective on the topic during a regular class period, and was asked to read until next class time. Next class period, participants met at a language lab where a computer is assigned to each. All participants in Class B were instructed to be familiar with the use of both bulletin boards and chat at the time the tasks were carried out since bulletin boards and chat discussion were integrated to the course instruction. When they met in the lab, participants were arranged in a group, based on the article they had read. For example, all of participants who worked on the article 1 belonged to the same group and they were asked to go the assigned BB where their article name appeared. When they clicked the article name, they saw the box, 'Post a reply to this message', and there were questions typed by the instructor inside the box. The participants were instructed to type their answers responding to the questions. For each article, six or seven participants were arranged to be in the same group, so there were six or seven posts for each article. The sample post in BB is shown in Figure 1 below.

FIGURE 1

Sample Postings in BB Discussions


① Reading Question 1 : In the second paragraph, in terms of "family unit" on what grounds same-sex marriage are objected?
-> The marriage as the social codification of an evolved long-term mating plan, with economic and legal benefits to facilitate family growth and stability. In other words, the marriage is a social system that men and women get together and products children. But they who same-sex married have not their own related biological baby and cannot make normal family units. So some people who advocated heterosexual marriage object it.

② Reading Question 2 : In the third paragraph, in terms of "civil union" on what grounds same-sex marriage are proposed?
-> first of all, the terms of "civil union" is that legalized word the same-sex marriage. The people who support the same-sex marriage claim that "civil union" should receive some privileges from society in this paragraph. For example, such as tax break as well as other advantages when it comes to inheritance, property ownership, and employment benefits. And they think that should be ended the simple justice which divided an emotion and ideology between the same-sex marriage and heterosexual marriage.

③ Reading Question 3 : In the forth paragraph, on what grounds same-sex marriage are proposed? What characteristics of same-sex marriage are described to support their argument?
-> Some same-sex marriage proponents argue that they have no matter on this community. Because they recognized it doesn't problem which harm to moral society. They may suppose it rather than heterosexual couples on the contrary with common people as adoption or giving help to orphans. And they think that the marriage a kind of custom would be enhanced by it makes a better men, furthermore same-sex marriage maintainer insist on civil unions would encourage gays and lesbians to settle down with one partner and raise families.

-> In the forth passage, homosexual marriage was described altruistic. And it allows loyalty and sexual fidelity as well as it rejects both the promiscuous and transitory relationship. There are two situations which sustain common family units and inhibit the same-sex marriage. Perhaps any conservative should support to build family units.

[Next Thread | Previous Thread | Next Message | Previous Message]

3) Task 3: A Decision-Making Activity

(1) Offline Group

Participants were arranged in a group consisting of four or five peoples and were asked to make a group solution to the decision-making activity through discussions. The activity required each group to argue for and against same sex marriage, listing at least three reasons to back up their arguments based on the articles they had discussed in the task 2. Upon completion, they were asked to orally present their solutions to class.

(2) Online Group

Participants met at a language lab and those who were in the same group for task 2 were randomly divided into two subgroups for task 3. Thus, each group consisted of three or four persons. Next, they were asked to make a group solution to the decision-making activity, which was the same to the one used in the Offline group, through chat discussion. For the chat discussion, Internet Relay Chat (IRC) program was used. The members of each group were asked to enter their own chat room, and to share their ideas with other group members. Upon completion, they were asked to do two things: 1) posting group answers on the assigned bulletin board, and 2) saving their chat dialogue as a text file and then sending it to the instructor. The instructor ensured that the saved transcript was sent correctly at the end of each class. The sample transcript of chat discussions is presented in Figure 2.

FIGURE 2

Sample Transcript of Chat Discussions

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* sunhee has joined #article3
<eunjin> GO-eun?In your view of social arguments,you mean SSM
  shhould be legalized because all marriages should be viewed
  legally as "civil unions".
<Jina> 1. SSM should be legalized because the heterosexuals
  enjoy as public citizens be extended to those who grow up
  and find themselves emotionally different
<eunjin> ,so we'd bettter answer 1)-1. Heterosexuals also have
  to enjoy as public citizens.
<eunjin> regarded jin-A's oppinion
<eunjin> recorded
<go-eun> I agree your thought
<Jina> 2. SSM should Not be legalized because In thd society |
  that the procreative is the social building block of
  civilization, the same-sex couple don't cotribute the
  procreative.
<go-eun> I think 1)-2 same-sex marriage can be supported in
  society and that the institution of marriage would be
  reinforced by using more people.
<eunjin> 2.SSM should NOT be legalized because procreation
  comes the first in a marriage,it has to be regarded same-sex
  marriage as a inherently sterile.
<eunjin> so ....we almost done it.. let's begin decorating
  sentences?!
<eunjin>  go eun?@? do u find answer2?
<go-eun> yes. but I don't know well whether right sentence
<go-eun> I think 2)
<go-eun>  SSM should Not be legalized because the law doesn't
  prohibit marriage between sterile heterosexual couples, or
  to women past menopause.
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4) Task 4: A Written Essay

Participants in both Offline and Online groups were requested to write a short essay about whether they agree or disagree with same sex marriage. They were asked to do this task individually, during class time, and submit it to the instructor. No class discussion or peer feedback was provided and the instructor graded the essay on a basis of Satisfactory/ Unsatisfactory option.

TABLE 1

Tasks and Procedures

	Offline group	Online group
Task 1	Class reading	Class reading
Task 2	Face-to-face discussion	Asynchronous bulleting board discussion
Task 3	Face-to-face discussion	Synchronous chat discussion
Task 4	Individually written essay	Individually written essay

3. Data analysis

Data analysis was conducted with two sources: to address the question of how CMC tasks affect L2 learners' errors, analysis of individual writing essays obtained from Task 4 was conducted, with reference to the classification of errors by Nas (1975, cited in Homburg, 1984). Nas classifies errors into three levels according to their effect on comprehensibility. Three different levels in three different kinds of errors are outlined as follows in the Table 2.

TABLE 2

Degrees and Types of Errors (Adopted from Nas, 1975)

	First-Degree Errors	Second-Degree Errors	Third-Degree Errors
Spelling	Derivation from correct spelling is minor, reader has no trouble recognizing word.	Serious deviation from correct spelling; word interpretable in context	Makes it impossible to be certain about the word that is meant
Lexical	Derivation from meaning is minor, reader has no trouble recognizing word.	So serious that item is only interpretable with the help of context	Makes it impossible to be certain about the meaning, except with the help of context
Grammatical	Form or structure would be correct in partly different context, no problem in understanding	Would be fatal to communication, except the rest of sentence is interpretable even without wrong words	Makes it impossible to be certain about the meaning of the sentence, even with the help of context

Based on the classification above, a number of spelling, lexical, grammatical errors

identified in participants' essays were counted, and they were classified again into three different degrees of errors, by the collaboration of the researcher, one native speaker of English, and one graduate assistant. Followings are excerpts from participants' essays showing samples of different kinds and different degrees of errors.

TABLE 3

Samples of Error Analysis

Sample Errors	Types of Errors
As previously stated, we could search for evidence supporting my asserttion …	Spelling, First-Degree errors
In the arguments concerning equality, same-sex marriage can be compared with facial segregation.	Spelling, Second-Degree errors
I think that putting the dismitud between the terms "civil marriage" and "civil union" …	Spelling, Third-Degree errors
….opponents say their object to same -sex marriage due to same arguments proponent say.	Lexical, First-Degree Errors
The third of reason could be founded in view of arguments concerning equality.	Lexical, Second-Degree Errors
And it does not perform any partiental (parturient? or parental?) roles.	Lexical, Third-Degree Errors,
I disagree to the same-sex marriage.	Grammatical, First-Degree errors
Proponents are agree to give equal marriage to gay and	Grammatical, Second-Degree Errors
Also, it's common of the past, the history of our nation always the one…	Grammatical, Third-Degree Errors

To address the question of how equally participants contribute to group work during CMC discussions, the transcripts from chat discussions of the Online group were analyzed, by examining a number of postings and a number of words posted by each participant.

IV. FINDINGS AND DISCUSSIONS

1. Learner Accuracy

Table 4 indicates the overall tendencies of the results with comparisons of the Offline and the Online group in respect to a total number of errors and words per essay. The results show that in general, the Online groups produced more words with less errors than the Offline group did. However, the ANOVAs show there was no significant group difference at an alpha .05 level.

TABLE 4

Comparison of Total Errors and Total Words for the Groups

Source	Offline (N=28)		Online (N=27)		ANOVA	
	M	SD	M	SD	F	Sig.
Means of total errors per essay	40.24	4.25	37.65	5.89	3.487	.067
Means of total words per essay	345.35	76. 40	352.50	80.65	.280	.640

To get more detailed information of how the two groups performed differently, total errors were categorized into three different degrees of errors and three different kinds of errors. In comparison of the two groups, the results revealed that first, in terms of different degrees of errors, the Online group performed better than the Offline group on all degrees of errors, but not at a statistically significant level. Second, in terms of different kinds of errors, the results indicate that the Online group outperformed the Offline group on the lexical errors at a significantly significant level. It was shown that two groups did not perform differently on the other two types—spelling and grammatical—of errors. Table 5 and 6 presents these results.

TABLE 5

Comparison of Degrees of Errors for the Groups

Level	Offline		Online		ANOVA	
	M	SD	M	SD	F	Sig.
First-Degree Errors	18.37	2.12	17.42	4.12	1.165	.285
Second-Degree Errors	15.10	2.29	14.00	2.26	3.169	.081
Third-Degree Errors	6.76	2.31	6.22	1.83	.910	.345

TABLE 6

Comparison of Types of Errors for the Groups

Source	Offline		Online		ANOVA	
	M	SD	M	SD	F	Sig.
Spelling	5.53	1.89	5.81	1.84	.307	.582
Lexical	16.17	2.05	14.14	2.29	13.941	.001*
Grammatical	18.52	4.54	17.69	4.62	.450	.505

Finally, the mean numbers of each level in each kind of errors were compared for the groups. As shown in Table 7, the results showed that the main effect for group was due to the significant difference in the Second-Degree errors in the lexical domain. That is, the Online group significantly outperformed the Offline group in terms of Second-Degree, lexical errors, and this results contributed to the main difference between the groups. With

this finding, the results are summarized as follows: 1) the group differences were mainly shown in lexical errors, 2) the group differences shown in lexical errors mainly resulted from the First-Degree and Second-Degree errors, which could be relatively easily noticed and fixed, and 3) errors with serious problems (Third-degree of errors) produced by the two groups were at almost equal levels, regardless of error types. That is, the performances of participants in this study imply that CMC discussions might yield an increased accuracy in participants' vocabulary use, but it may not easily involve upgrading vocabularies with fatal errors. Also the results suggest that learners in this study have not greatly benefited from CMC discussions in noticing their spelling or grammatical errors.

TABLE 7

Comparison of Degrees and Types of Errors for the Groups

Level	Source	Offline		Online		ANOVA	
		M	SD	Sig.	SD	F	Sig.
First-Degree Errors	Spelling	2.85	1.32	3.14	1.29	.679	.414
	Lexical	8.57	3.29	7.51	2.20	3.167	.076
	Grammatical	6.94	1.85	6.76	3.09	.075	.785
Second-Degree Errors	Spelling	2.10	.78	2.14	.76	.038	.846
	Lexical	6.10	1.25	5.40	1.21	4.396	.039*
	Grammatical	6.88	1.81	6.45	1.70	.834	.365
Third-Degree Errors	Spelling	.57	.50	.51	.50	.150	.700
	Lexical	1.50	1.00	1.22	.64	1.492	.227
	Grammatical	4.69	1.73	4.48	1.65	.206	.651

One of possible reasons for the Online group's better performance on lexical errors is that having the chance to read others' responses posted in the bulletin board and chat discussions might provide additional opportunities to notice and reflect their lexical use in the messages they compose and read. This assumption is supported by the previous studies: a number of studies (Abrams, 2003; Chu, 2006; Kitade, 2000; Salaberry, 2000; Savignon & Roithmeier, 2004; Van Handle & Corl, 1998; Warschauer & Kern, 1999) have indicated that L2 learners' improvement through CMC discussions occurred most frequently in the lexical domain. For example, in a study by Kitade (2000), learners showed a greater tendency toward recasting of vocabularies during chat discussions. Also Warschauer and Kern (1999) have proposed that the written archived form of asynchronous CMC can give students a great opportunity to notice their lexical misuse when they read the messages. Savignon and Roithmeier (2004) have argued that there may be a strong possibility for 'lexical uptake' when L2 learners participate in CMC discussions. That is, learners occasionally pick up the words or terminology used in prior postings and reused them in their own postings. Through their use in subsequent postings, these words or phrases

become part of the participants' specific vocabulary for the topic. Savignon and Roithmeier argues that such repetition and association offers language learners an obvious opportunity for general vocabulary building. The finding from this study supports all these arguments, suggesting that the CMC activities through peer interaction may increase the chances of using corrected words.

2. Learner Participation

To address the question of how equally L2 learners participate in CMC discussions, chat transcripts from the Online group were analyzed. The task that students were requested to complete was to present possible reasons to argue for and against the same sex marriage through chat discussions. Each group consisted of four students and each of twenty-eight students in the Online group belonged to one of seven groups.

To get a general picture of how they performed, first, an average number of postings and an average number of total words per each participant were counted (Table 8). Next, for each of seven chat groups, a number of postings and a number of total words per each participant were counted. In addition, the percentage of postings and the percentage of total words per each participant were also calculated to see how actively each participant contributed to their own group discussions. Table 9 and 10 illustrate these results.

TABLE 8

Means of Postings and Total Words per Each Participant

Mean of Postings per Each User (N=28)		Mean of Total Words per Each User (N=28)	
M	SD	M	SD
26.46	7.05	242.93	34.36

TABLE 9

Postings per Participant in Chat Dialogues

Group	A number of Postings per Each User Participant				% of Postings per Each User Participant			
	1	2	3	4	1	2	3	4
1	27	30	18	25	27.0%	30.0%	18.0%	25.0%
2	18	21	24	19	21.9%	25.6%	29.2%	23.1%
3	32	52	29	26	23.0%	37.4%	22.0%	18.7%
4	32	22	31	26	28.8%	19.8%	27.9%	23.4%
5	25	26	33	22	23.5%	24.5%	31.1%	20.7%
6	21	28	34	32	18.2%	24.3%	29.5%	27.8%
7	25	18	26	19	28.4%	20.4%	29.5%	21.5%

TABLE 10
Total Words per Participant in Chat Dialogues

Group	Means of Total Words per Each User Participant				% of Words per Each User Participant			
	1	2	3	4	1	2	3	4
1	172	238	257	259	18.5%	25.7%	27.7%	27.9%
2	165	260	303	246	16.9%	26.6%	33.6%	25.2%
3	191	215	254	241	31.7%	23.8%	28.1%	26.7%
4	244	243	221	229	26.0%	25.9%	23.5%	24.4%
5	282	267	285	234	26.4%	25.0%	26.6%	21.9%
6	253	241	223	213	27.2%	25.9%	23.9%	22.9%
7	257	269	317	223	24.1%	25.2%	29.7%	20.9%

The tendencies of participation shown in Table 9 and 10 suggest that participants in each group were mostly engaged in active discussions during the chat session. On average, each student posted messages more than 26 times, and produced more than 242 words to discuss with other group members for the solution to the problem. The percentage values further showed that most of participants in each group contributed to group discussions at relatively equal levels, although it seems that some of participants performed differently than the others. For example, participant 3 in Group 2 posted the messages significantly more than the other participants, and participant 1 in Group 2 produced words significantly less than the others. Despite these differences, the results have shown that in general, no particular individual remained silent or were left behind in their own group discussions, or no particular individual dominated the group activities. It seems that most of participants attempted to put input for group work, being motivated by peer interaction.

One of the potential reasons that participants participated relatively equally and actively in the chat discussion is to allot the work individually. During chat discussions, most of group members attempted to divide work to each individual. The following is an excerpt of chat discussions showing that the participants were negotiating with the other group members to decide who to do what for completing the job.

Excerpt (1)[1]
1<JungHo>: it's running out of time
2 <JungHo>: let's make sentences
3<Euna>: let's make sentences, is it ok? every one?

[1] In this and subsequent excerpts, a number before each line indicates the order of the message posted during chat sessions. The names in excerpts were changed by the researcher for anonymity of participants.

5<JungHo>: soyeon you make 1
6<Soyeun>: yes
7<JungHo> euna you make 2
9<JungHo> kang, you make 4 with that
10<Kang> but..i don't know that what's the civil law...
12<JungHo> let's use easy english
17<Kang> we must make the answer of question...about No.1 & 2
18<Soyeun> i make this. it's ok?
19<JungHo> good
20<Soyeun> or need more
21<Kang> good
22<JungHo> i will summarize

The excerpt above reveals that the students attempted to seek applicable and effective ways of doing the job, and also took responsibility for the portion of work in order to achieve time efficiency. Also the participants above appeared to have easily reached agreements on how to divide the work even though some showed a little concern about their knowledge of a given task (for example, 10Kang). This finding implies that a chat discussion allowed the participants to connect to the others in their group, and be motivated to do the task, and in turn, be engaged with a relatively active and equal contribution regardless of their language proficiency. This observation is further supported by the fact that less proficient students actually produced a considerable amount of messages during their group discussion, checking their comprehension of the tasks. Here is an example:

Excerpt (2)
3<Sung> I think they to pregnant~~~
4<Sung> a~~~
7<Mi> It also does not fulfill any procreational role.
8<Young> I don't agree to the legalization of the same-sex marriage.
9<Sung> I don't understand well about the question 3
10<Mi> They would make such adoptions easier.
11<Sung> I couldn't tell you the question 3 in English.
12<Sung> It's too difficult to explain.
15<Mi> so, now, we are making the answers.
16<Sung> a~~~~difficult
17<Mi> come on~~~
18<Young> The question 3 states that adoption is possible act to the same-sex couples?
19<Mi> yes~

20<Young> This part, I don't agree...
21<Mi> so people in a health and child welfare organizations support same-sex parents?
22<Sung> mankind must product children but same-sex marriage is it impossible
23<Mi> yes!
24<Sung> Hyeyoung, how do you think of question 3?
25<Young> I don't agree
26<Sung> why?
27<Young> because there are many problems between the same-sex marriage as like a heterosexual couple
28<Sung> but same sex marriage can solve orphan child

It is noticeable that the participant, Sung, may have been less proficient than the other members since he made grammatical or lexical mistakes more frequently (3<Sung>, 22<Sung>, 24<Sung> 28<Sung>) than the others did, and also reported having difficulty understanding the question in English (9<Sung>). However, he posted a similar number of messages as the other group members (Sung is participant 1 in Group 5), and appeared to have made a great effort not to lose track or not to remain silent, by asking questions and ideas for the tasks. The attitude shown in the participant, Sung, suggests that chat discussions can allow an increased outcome from each participant at a relatively equal level.

V. CONCLUSION

The findings of the current study are summarized as follows:

First, the results from the current study partially support an argument that CMC tasks affect L2 learners on improving their accuracy. On the written essay, participants in the Online group produced less errors than the Offline group at a statistically significant level, but being limited to errors in the lexical domain, and those that can be relatively easily corrected. The non-significant findings from categories other than the Second-Degree lexical errors tell that when no further aid is provided, the CMC tasks might not increase participants' use of corrected words or sentences to a significant level. It was shown that participants in this study could not easily benefit from CMC tasks without follow-up activities for correction, or tasks without vocabulary or grammar practices for further checking. From these findings, it seems that peer-interaction needs to be supplemented by other input or feedback in addition to sources from peers in order to utilize the advantages of using CMC for reducing learners' errors.

The implication from the findings concerning learner accuracy is that when designing

classroom activities with CMC being integrated, careful consideration and detailed planning are needed. Since it seems that factors such as time constraints, and task difficulty can significantly affect learners' outcomes from peer-interactions, it might be crucial for teachers to consider possible ways of such factors being controlled. To illustrate this point, teacher's feedback on the learners' outcomes from the CMC tasks can be given via certain follow-up class activities; teachers' scrutinizing tasks and each participant's saved information to detect constantly occurring errors that might serve as defective input for other participants, and having class discussions to correct such errors at their convenience. Especially with large classes, a teacher may need to be aware of how to intervene learners' interactions to an essential degree in a time-efficient manner, in order to ensure that learners avoid misunderstanding and misusing the target language during peer-interactive CMC tasks.

Second, in this study, the synchronous CMC task appears to have provided an increased chance to induce contribution from all the participants. Those engaged in chat discussions showed a tendency to participate actively in their group discussions and to make a contribution to group work even in cases where they did not have sufficient linguistic knowledge to solve the problem. This result indicates that the synchronous CMC discussion can be advantageous for increasing the learners' motivation to participate in the tasks, and for inducing increased outcomes from each participant, which both play significant roles in language learning.

One of the implications from the findings regarding learner participation is that the pattern of learner participation can be affected by the nature of the task involved. The participants in this study showed a relatively equal participation in the tasks given and it could have been due to the fact that the participants found it easy to allot a given task to individual members. It was observed that in making group answers of the questions, most groups proceeded their chat discussions by assigning roles to each participant. The observation of such group performance in a chat session suggests that the task gave an easy access for learners to assign roles to themselves, and it could yield the increased chances for equal participation from each learner. From this finding, this study assumes that well-organized activities that permit agreement between participants in an easy way can be a crucial factor so as to elicit output equally from each learner, as well as to prevent one person from dominating the discussion environment.

This study has several limitations. First, the participants' performance was examined with limited sources. If a further investigation of learners' performance over a longer period with writing tasks or chat discussions on the different topics had been conducted, it might have suggested more consistent results. Thus, the results of the current study should be interpreted to a limited degree. Second, there was no control for learners' attitude toward the tasks, or toward English proficiency itself, which might be one of important

factors affecting learners' performance in participating in and completing tasks. Thus, if the learners' language proficiency and attitudes were examined in detail, greater depth and breadth could be achieved in examining learners' performance on the CMC tasks. To address this limitation, it is necessary to revisit what types of participation structure can be constructed with respect to learner attitude in L2.

REFERENCES

Abrams, Zs. (2003). The effect of synchronous and asynchronous CMC on oral performance in German. *Modern Language Journal, 87*, 157-167.

Adair-Hauk, B., Willingham-McLain, L., & Youngs, B. (2000). Evaluating the integration of technology and second language learning. *CALICO Journal, 17*, 269-305.

Beauvois, M. (1997). Computer-mediated communication: Technology for improving speaking and writing. In M. D. Bush & R. M. Terry (Eds.), *Technology-enhanced language learning* (pp.165-184). Lincolnwood, IL: National Textbook Company.

Blake, R. (2000). Computer-mediated communication: A window on L2 Spanish interlanguage. *Language, Learning & Technology, 4*, 120-136.

Chu, H. (2006). Interactional modifications in text-based chats between Korean and Japanese students. *English Language & Literature Teaching, 12*, 1-18.

de la Fuente, M. (2002). Negotiation and oral acquisition of L2 vocabulary. *Studies in Second Language Acquisition, 24*, 81-112.

de la Fuente, M. (2003). Is SLA interactionist theory relevant to CALL?: A study on the effect of computer mediated interaction in L2 vocabulary acquisition. *Computer Assisted Language Learning, 16,* 47-81.

Ellis, R., & He, X. (1999). The roles of modified of input and output in the incidental acquisition of word meanings. *Studies in Second Language Acquisition, 21,* 280-301.

Foster, P. (1998). A classroom perspective on the negotiation of meaning. *Applied Linguistics, 19*, 1-23.

Gass, S., Mackey, A., & Pica, T. (1998). The role of input and interaction in second language acquisition introduction to the special issue. *The Modern Language Journal, 82*, 299-307.

Han, J. I. (2006). A study of the effective use of ICT in developing the fluency and accuracy of Korean college students' English speaking skills. *Multimedia-Assisted Language Learning, 9,* 211-242.

Holt, D., Chips, B., & Wallace, D. (1991). Cooperative learning in the secondary school: Maximizing language acquisition, academic achievement, and social development.

NCBE information guide series, 12. Retrieved December 20, 2008, from the World Wide Web: http://www.ncela.gwu.edu/pubs/pigs/pig12.htm.

Homburg, T. (1984). Holistic evaluation of ESL compositions: Can it be validated objectively? *TESOL Quarterly, 18*, 87-107.

Hwang, P. A. (2008). Linguistic characteristics in synchronous and asynchronous CMC. *English Language & Literature Teaching. 14*(2), 47-66.

Kamhi-Stein, L. (2000). Looking to the future of TESOL teacher education: Web-based bulletin board discussion in a methods course. *TESOL Quarterly, 34*, 423-455.

Kelm, O. (1996). The application of computer networking in foreign language education: Focusing on principles of second language acquisition. In M. Warschauer (Ed.), *Telecollaboration in foreign language teaching: Concepts and practice* (pp. 83-104). Honolulu, HI: University of Hawaii Press.

Kern, G. (1995). Restructuring classroom interaction with networked computers: Effects on quantity and characteristics of language production. *The Modern Language Learning, 79*, 457-476.

Kitade, K. (2000). L2 learners' discourse and SLA theories in CMC: Collaborative interaction in internet chat. *Computer Assisted Language Learning, 13*, 143-166.

Long, M. (1996). The role of the linguistic environment in second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413-468). San Diego, CA: Academic Press.

Lou, Y., Abrami, P., & Apollonia, S. (2001). Small group and individual learning with technology: A meta-analysis. *Review of Educational Research, 71*, 449-521.

Nas, G. (1975). *Determining the communication value of written discourse produced by L2 learners*. Utrecht, The Netherlands: Institute of Applied Linguistics.

Pellettieri, J. (1999). Negotiation in cyberspace: The role of chatting in the development of grammatical competence. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 59-86). Cambridge: Cambridge University Press.

Perez, L. (2003). Foreign language productivity in synchronous versus asynchronous computer-mediated communication. *CALICO Journal, 21*, 89-104.

Reid, J., & Powers, J. (1993). Extending the benefits of small group collaboration to the ESL writer. *TESOL Journal, 3*, 25-32.

Salaberry, M. (2000). L2 morphosyntactic development in text-based computer-mediated communication. *Computer Assisted Language Learning, 13*, 5-27.

Savignon, S., & Roithmeier, W. (2004). Computer-mediated communication: Texts and strategies. *CALICO Journal, 21*, 265-290.

Smargorinsky, P. (2002). *Teaching English through principled practice*. NJ: Merrill Prentice Hall.

Sotillo, S. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning & Technology, 4*, 82-119.

Swain, M. (1995). Three functions of output in second language learning. In G. Cook & B. Seidlhofer (Eds.), *Principles and practice in applied linguistics: Studies in honor of H. G. Widdowson* (pp. 125-144). Oxford: Oxford University Press.

Tu, C. (2000). Critical examination of factors affecting interaction on CMC. *Journal of Network and Computer Applications, 23*, 39-58.

Van Handle, D., & Corl, K. (1998). Extending the dialogue: Using electronic mail and the Internet to promote conversation and writing in intermediate level German language course. *CALICO Journal, 15*, 129-143.

Warschauer, M. (1997). Comparing face-to-face and electronic communication in the second language classroom. *CALICO Journal, 13*, 7–26.

Warschauer, M., & Kern, R. (1999). *Network-based language teaching: Concepts and practice.* Cambridge: Cambridge University Press.

Examples in: English
Applicable Languages: English
Applicable Levels: Secondary, tertiary

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