

- Title of Project: Computer-mediated Communication and its Effects on Oral Proficiency Development
- Type of Grant Application : Doctoral Dissertation Grant
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#### Detailed Proposal

##### Statement of research issue or problem and relationship to the Foundation's current research priority

The past thirty years or so has witnessed dramatic changes of how we communicate with each other. As computers continue to make an impact, it is important for teachers to take advantage of the use of computer technology to facilitate learning and teaching in the classroom. Incorporating computer technology in classroom teaching could be beneficial especially for teaching foreign languages because Internet can provide learners with unlimited sources of input and opportunities to practice the target language by interacting with each other or native speakers. Input and interaction, the two most important factors in successful second/foreign language learning, are achieved through computers, the internet, in particular. Language input on the web is, in most parts, authentic, which means that it is not designed for a teaching purpose. It is for the native speakers of the target language and has authentic communicative purposes. In addition to the abundance of language input, learners can also practice the language and communicate with each other through computer anytime and anywhere as long as they are connected to the internet. As conversation in L2 is not only a medium of practice, but also the means by which learning takes place (Ellis, 1994), the more opportunities that learners have to communicate, the better their language learning would be.

The interactions via computer has done mostly through writing. Even though as technology allows us to communicate with an aid of visual image and audio sounds thanks to high-speed Internet connection, writing is still a major mode of online communication. In spite of the fact that CMC is executed through intense writing, many of the characteristics of the online communication resemble speaking as conversation occurs spontaneously without much planning or preparation.

Similar observations were made among those who investigated CMC at the earlier stage and some of them (Kern, 1995; Warschauer, 1996; Beauvois, 1997) mentioned the possibilities that synchronous conversation on computer might enhance speaking ability among second language learners. The transferability of skills from writing and speaking fits into current Second Language teaching and learning trends as current goals in Second Language Acquisition (SLA) is to promote development of oral skills. The use of CMC in the language classrooms, therefore, emerges as a potential candidate for improving speaking ability among L2 learners

##### Theoretical background

This section includes a discussion of the theoretical framework of the use of CMC in the

L2 classroom: input hypothesis, interaction hypothesis, affective filter, and output hypothesis. Each of these theories or hypotheses explains why and in what ways CMC has a positive and reinforcing influence on second language development.

Krashen's monitor model (1981 & 1982) claimed that comprehensible input that "contains structures a little beyond the current level of competence of a learner" (Krashen 1982, p.21) is necessary for acquisition to occur. Whether comprehensible, comprehended (Gass, 1988) or even incomprehensible (White, 1987) input is what drives a learner to acquire a language, interaction between learners can create a large amount of input for the other party and the large amount of can enhance a learner's development in L2. Research on CMC shows that the amount of language produced by each learner in a CMC context increases when compared to face-to-face interaction (Beauvois, 1992; Kelm, 1992; Kim, 2000; Warschauer, 1996). While Krashen puts more emphasis on 'input', Long and his colleagues (Long, 1981,1983; Pica, 1987, 1994; Gass, 1997) are more interested in the process through which input is transformed into intake and acquired. In this process-oriented approach, learners negotiate meaning by asking questions, clarifying meaning, requesting confirmation when they encounter a communication breakdown. According to Long, these types of interaction are critical for language development because language is acquired as learners actively engage in attempts to communicate in the target language. It is believed that the best way to learn to interact is through interaction itself and CMC provides a good environment for interaction. Learners interact with each other and with native speakers no matter where they are. Interaction can occur outside the classroom as long as the learners are logged on a computer. Increased 'negotiation of meaning' is reported when learners interact through a computer as opposed to face to face interaction (Beauvois, 1998; Kern, 1995; Lee,2003; Pellettieri, 2000; Warschauer, 1996).

Krashen also raised the awareness of the importance of learners' state of mind with the affective filter hypothesis. Affect includes factors such as motivation, attitudes, self-confidence, and anxiety. If the affective filter is up, input is impeded while the filter is low, input may become intake and eventually reach the language acquisition device according to his model. Anxiety and motivation seem to affect the whole learning process from input, process to output, performances ( Horwitz, Horwitz, & Cope, 1986; MacIntyre & Gardner, 1991b). L2 learners can learn better when they are relaxed and motivated; however, learning can be impeded when learners are stressed, self-conscious, or unmotivated. Face-to-face conversation could pose an immediate threat to speakers and make participants anxious when the communication does not go as well as they anticipate. However, online communication may reduce anxiety, pressure from others, and even cognitive loads (Kern, 1995;Payne & Whitney, 2003; Pellettieri, 2000; Sotillo, 2000;Warschauer, 1996). CMC has been discussed as 'conversation in a slow motion' (Beauvois, 1998) that allows time for a learner to process the language without cognitive overload.

The strongest support of CMC in SLA is found in Swain's output hypothesis. Swain (1985), who investigated French immersion programs for children in Canada, found that what was lacking was productive use of language. The output hypothesis states that opportunities to produce language are not only important for practicing but also for learning structures of the language. According to her hypothesis, comprehension of L2 input is often achieved by semantic means but it is the effort of composing new

utterances that is more likely to drive learners to test their hypotheses about target language syntax. The acquisition of new syntactic structures is more likely to result from learners' attempts at L2 production. Through CMC, learners are forced to process syntactic structures and to notice elements of L2, thus modifying their output (Swain & Lapkin, 1995; Ellis, 1993). Learners need opportunities for "pushed output" to acquire language and on CMC, these opportunities are maximized with more equal participation than with face to face communication.

From a pedagogical perspective, a shift from teacher-centered classroom to student-to-student learning environment has been made in the last thirty years. The new learning context provides learners more opportunities to practice the language and they learn from each other as more proficient learners help the less proficient acquire the target language through socialization and collaboration (Vygotsky, 1978). This type of collaboration and co-construction of knowledge are well supported and practiced in language classrooms as language acquisition is in essence a socio-cultural process where a learner is seen as a social being (Van Lier, 1994). CMC can be used as a tool to make this happen in the classroom by limiting teacher's participation to a minimum, maximizing students' participation.

Research has documented the benefits and risks involved in CMC. Some of the benefits that CMC offers in language learning are that CMC may help create a less stressful environment for second language practice (Beauvois, 1997; Chun, 1998; Warschauer, 1996 & 1997). CMC also provides for more equal participation than face-to-face interaction (Chun, 1994; Sullivan & Pratt, 1996) by allowing shy and less motivated students to participate in the exchanges. Increased output from more learner participation (Beauvois, 1992; Kelm, 1992; Kern, 1995; Kim, 2000; Warschauer, 1996) as well as better quality language (Chun, 1994; Kelm, 1992; Kern, 1995; Warschauer, 1996) can be added to the list of the benefits that CMC offers. From a research standpoint, CMC provides less intrusive data collection tools compared to traditional procedures such as recording face-to-face interactions between students and teacher (Smith, 2003). Student interaction is easily recorded and retrieved with the help of CMC. These programs also add analytic functions such as word count, word density and complexity.

However, researchers who have measured the complexity of language use in CMC differ in their observations. Kelm (1992), Kern (1995), and Lee (2002) claim that grammatical accuracy is likely to suffer in the interaction of CMC where the focus lies on communication rather than on forms. On the other hand, some researchers (Warschauer, 1996; Chun, 1994; Pellettieri, 2002) found that the exchanges are longer and students use language which is lexically and syntactically more complex in electronic discussion and argue that CMC plays a significant role in promoting grammatical accuracy and complexity. This issue requires further investigation to examine what caused the two different results on the two studies.

Another benefit of CMC is related to the development of oral communication skills as reported in some studies (Beauvois, 1997; Scot & Payne, 2002; Adams, 2003). Synchronous CMC seems to be an ideal context for language practice as it provides more opportunities to pay attention to the form and the content of the message, while keeping the message flow without losing the flow of conversation. CMC slows down communicative interactions, thus allowing learners to have more processing time when they read and type messages on a computer screen. Since Beauvois (1998) and others

suggested a possible link between written electronic communication and the enhancement of oral skills, three studies, to date (Beauvois, 1998; Payne & Whitney, 2002; Abrams, 2003) directly addressed the issue of transferability to speaking from written CMC. The results of these studies, however, are not consistent. While two studies (Beauvois, 1998; Payne & Whitney, 2002) found positive effects of CMC on oral proficiency development, Abrams' study did not obtain the same results.

The differences in the results can be explained by taking a closer look at the methodology and the amount of treatment participants received. It is possible that variation in measurements and the amount of treatment affected the results. For example, Abrams (2003) used a detailed analysis of oral production such as lexical richness, lexical density, and structural complexity to measure to what extent speaking is improved while others (Beauvois, 1997; Payne & Whitney, 2003) used a more holistic evaluation to measure the improvement of oral skills. Furthermore, interviews, a form of the speak test, were used to measure oral proficiency development (Beauvois, 1997; Payne & Whitney, 2003) while classroom discussion was used in Abrams' study (2003).

The amount of treatment could be one of the reasons why the Kost study (2003) did not find positive effects for synchronous communication on oral proficiency development. In her study, only twenty minutes a week were spent on CMC as opposed to more than an hour a week in other studies (Beauvois, 1997; Payne & Whitney, 2002).

It seems that regardless of types of treatments (e.g., synchronous CMC, asynchronous CMC or no treatment), students' oral proficiency improves as long as they interact in the target language. CMC should be seen as a new tool for communication in its own right, not a magical tool that can improve language learning in no time.

### Research methodology

(a) Participants: Two intermediate ESL classes at CESL (Center for English as a Second Language) at the University of Arizona will participate in my study. Each class consists of about twenty to twenty five students who come from different linguistic and cultural backgrounds. One class is a treatment group and the other a control group. Therefore, it must be made sure that two classes are equivalent except the treatment. Two classes taught by the same instructor will be chosen for the present study.

(b) Data collection methods:

There are four major data collection methods: chat transcripts, the results of questionnaires, the results of two speak tests, and the recordings of chat sessions. Students in a treatment group will be asked to come to a state of art COH Lab (College of Humanities language lab) of the University of Arizona, once a week to chat online with other classmates. Assignments and tasks will be given to them each session, for example, to discuss a topic related to their homework and to do a two-way/one-way information gap task. COH lab has developed its own chat program which allows a researcher to analyze a large amount of linguistic data (e.g., the type token ratio). It also automatically replaces student's names with pseudonyms and saves it under a code protection so only a primary investigator and two lab technicians will be able to access the real identification of students. Second, two questionnaires are created to investigate changing perceptions of and attitudes toward the use of CMC (Computer mediated communication) in general and synchronous CMC in particular. The answers will be compared and analyzed

accordingly. Third, two speak tests will be conducted at the beginning and the end of the study period in order to investigate whether there is any significant difference in two test results. If there is a significant difference between two scores, it will be interpreted that synchronous CMC facilitates speaking skills. Last, each lab session will be recorded with a camcorder and this data will serve as a qualitative resource of what students do while chatting online (e.g., reading aloud and interaction with other students). This portion of data is unique to the present study because most of the CMC related studies dealt mostly with chat transcripts and did not look at what is actually happening in class chatting situations.

(c) Analysis of the data:

Chat Program will allow students chat online, store all the chat transcripts under the COH Lab data base, and calculate a type/token ratio of the transcripts. WordSmith tools will help analyze a large amount of linguistic corpus data (e.g., concordance, keyword and wordlist) to investigate lexical and structural complexity and accuracy. SPSS will do statistical analyses ranging from a simple T-test to compare the scores of two speak tests to an analysis of multi-variant to see if there is any correlation between some of the answers of the questionnaire and the development of language proficiency/performance.

#### Statement of implications of research for theory, policy, and/or practice

The present study provides a practical teaching practice to classroom teachers who want to incorporate computer technology into their teaching because synchronous and asynchronous computer mediated communication is a useful tool to improve students' speaking skills as well as grammatical accuracy/complexity. As today's language learners are computer literate and ready to use computers to communicate each other, the incorporation of CMC in language classrooms is an important teaching and learning tool.

The study is most relevant to EFL contexts such as Korea, where internet infrastructure is highly developed and there are large demands of learning English, yet native speakers of English are scarce. If the present study proves the definite effectiveness of synchronous CMC on oral proficiency development, a policy level of implication would be implementing CMC on a curriculum nationwide.