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Online Communication

by Mark Warschauer

Introduction

The term "online communication" refers to reading, writing, and communication via networked computers. It encompasses synchronous computer-mediated communication (whereby people communicate in real time via chat or discussion software, with all participants at their computers at the same time); *asynchronous* computer-mediated communication (whereby people communicate in a delayed fashion by computer, using programs such as e-mail); and the reading and writing of online documents via the World Wide Web. Second language researchers are interested in two overlapping issues related to online communication: (1) how do the processes which occur in online communication assist language learning in a general sense (i.e., online communication for language learning); and (2) what kinds of language learning need to occur so that people can communicate effectively in the online realm (i.e., language learning for online communication).

Background

Online communication dates back to late 1960s, when U.S. researchers first developed protocols that allowed the sending and receiving of messages via computer (Hafner & Lyon, 1996). The ARPANET, launched in 1969 by a handful of research scientists, eventually evolved into the Internet, bringing together some 200 million people around the world at the turn of the millennium.

Online communication first became possible in educational realms in the 1980s, following the development and spread of personal computers. The background on online communication in language teaching and research can be divided into two distinct periods, marked by the introduction of computer-mediated communication in education in the mid-1980s and the emergence of the World Wide Web in the mid-1990s.

Computer-Mediated Communication

In the first period, dating from the mid-1980s, language educators began to discover the potential of computer-mediated communication for language teaching (Cummins, 1986). The integration of computer-mediated communication in the classroom itself divided into two paths: on the one hand, some educators began to use e-mail to set up *long-distance exchanges*, and, on the other hand, other educators began to use synchronous software programs (in particular, Daedalus Interchange (Daedalus Inc., 1989) to allow *computer-assisted conversation* in a single classroom.

Long-distance exchanges and computer-assisted conversation had overlapping, but distinctive, justifications. Both types of activities were seen to shift the focus from language form to language use in meaningful context (e.g., Kelm, 1992; Meskill & Krassimira, 2000) and thereby increase student motivation (e.g., Meunier, 1998; Warschauer, 1996b). In addition, long-distance exchanges were viewed as brining about increased cultural knowledge from communication with native-speaking informants (e.g., Kern, 1995a; Soh & Soon, 1991), and making reading and writing more authentic and collaborative (e.g., Tella, 1992b). Those implementing computer-assisted conversation emphasized the linguistic benefits which could be achieved from rapid written interaction, such as better opportunities to process and try out new lexical or syntactic patterns as compared to oral interaction (e.g., Ortega, 1997; Warschauer, 1999).

The World Wide Web

The World Wide Web is an international online database that allows the sharing of linked multimedia documents. These documents can be authored in a non-linear, layered and linked format, which is referred to as hypertext or hypermedia. The development and spread of the World Wide Web in the 1990s marked a second period in the use of online communication in language teaching. One the one hand, the Web allows additional modes of computer-mediated communication through Web-based chat rooms, bulletin boards, and discussion forums, thus making even more popular the kind of long-distance exchanges and computer-assisted conversation activities described above. In addition, the World Wide Web adds a new dimension to online communication and learning by allowing students to find and read online documents on a variety of topics from throughout the world and to author and publish similar documents to share with others.

Some researchers have viewed the Web as an extension of an L2 culture or society; by engaging in Web-based activities, students can gradually become members of the community of English language speakers, in the same way that they might through other forms of immersion in a culture (Zhao, 1996). Others view the Web as an extension of a CD-ROM, in other words, a good environment to create multimedia language learning materials with the added

advantage of allowing student interactivity (Chun & Plass, 2000). Others view the Web as an extension of (and alternative to) print, that is, a major new medium of literacy that needs to be mastered on its own terms for success in 21st century life (Shetzer & Warschauer, 2000; Warschauer, 1999). Since the Web is a vast and diverse environment, encompassing a huge variety of online documents and an array of evolving communications tools, it is perhaps overreaching to seek a single unitary framework to motivate its integration in the classroom.

Research

Research on online communication and second language learning has focused on three general topic areas: (1) interaction, (2) reading and writing, and (3) affect.

Interaction

Computer-mediated communication, which allows the recording of all messages for post hoc analysis, provides a wealth of easily accessible data for language researchers studying interaction. Studies of L2 computer-mediated interaction have thus far looked at the linguistic characteristics of computer-mediated messages, the types of negotiation and linguistic modification that occur, and the patterns of participation that emerge.

Linguistic characteristics. An important question facing both L1 and L2 researchers is whether computer-mediated communication has its own distinctive linguistic features. L2 research has found that computer-assisted conversation is syntactically more complex and lexically more dense than face-to-face conversation (Warschauer, 1996a). In a comparative study of two modes of student-teacher dialogue, it has also been shown that L2 students' writing via e-mail is more informal and conversational than their writings via pencil-and-paper (Wang, 1993). These studies support prior claims that computer-mediated communication tends to fall in the middle of the continuum of more formal communication (as often featured in writing) and informal communication (as often featured in speech). The studies suggest that computer-mediated communication can help serve as a useful bridge between speaking and writing by facilitating L2 interaction that is linguistically complex yet informal and communicative.

Negotiation and Modification. One of the most important domains of second language research is that of negotiation and modification, that is how second language learners modify their communication in negotiation and interaction with others (see Pica, 1994). Several studies have shown extensive incorporation of new syntactical patterns or lexical chunks during computer-mediated interaction and have concluded that the online medium facilitates such incorporation by allowing greater opportunity to study incoming messages and to carefully plan responses (e.g., Pelletieri, 2000; St. John & Cash, 1995). Research has also indicated that the types of tasks and topics chosen have an important affect on the nature of computer-mediated negotiation, with substantial benefits found from conversational tasks which are goal-oriented and which encourage learners to reflect on their own use of language (Lamy & Goodfellow, 1999; Pelletieri, 2000).

Participation. L1 research has shown that computer-mediated communication tends to feature more balanced participation than face-to-face conversation, with less dominance by outspoken individuals (see summary of research in Sproull & Kiesler, 1991). Studies of L2 classroom discourse have validated this finding. First, it has been shown that student participation vis-à-vis teacher participation increases dramatically in computer-mediated communication (e.g., Kern, 1995b; Warschauer, 1999). Second, it has been found that students themselves participate more equally in computer-mediated communication, and it is precisely those students who participate least in face-to-face conversation who increase their participation most when changing to a computer medium (Warschauer, 1996a). Third, it has been found that in mixed L2-L1 classrooms, L2 students are more likely to participate in computer-mediated than in face-to-face conversation (Warschauer, 1999). These findings suggest that computer-mediated communication can be a useful tool for encouraging greater participation of quite or shy students and for creating alternatives to the traditional "IRF" (teacher initiation, student response, and teacher follow-up) discourse pattern which dominates most classrooms.

Reading and Writing

A second line of research has investigated the types of reading and writing processes that occur in online environments. Qualitative studies in several online classrooms have described how students' reading and writing processes became more collaborative and purposeful as students engage in project-oriented research and writing for a real audience (Barson, Frommer, & Schwartz, 1993; Meskill & Krassimira, 2000; Tella, 1992b; Warschauer, 1999). These benefits occur both during e-mail exchanges (e.g., Kern, 1996) and, especially, when students publish their work on the World Wide Web, as the act of public display encourages them to make their writing more "reader-centered" (i.e., written with the audience in mind; see discussion in Warschauer, 1999). These changes in reading and writing processes have been reported only in those classrooms where the Internet was integrated by teachers into collaborative, content-focused project work, and not in situations characterized by a high amount of teacher control and a focus on the mechanics of writing (see Warschauer, 1998).

Affect

A third area of research has been on the affective impact of online learning, and, in particular, whether opportunities for online communication increase students' motivation. Research to date suggests that online learning activities are generally quite motivating for language learners, in part because learners feel they are gaining technical skills which will

prove beneficial in the future (Warschauer, 1996b). Learners are also motivated by the opportunity to publish their own work, communicate with distant partners, work collaboratively in groups, and create their own projects that reflect their own interests (Barson, et al., 1993; Tella, 1992a; Warschauer, 1999). Learners lose motivation, though, if they don't understand or agree with the purpose of technology-based activities and feel that such activities are interfering with their language-learning goals (Pinto, 1996; Warschauer, 1998).

In summary, research on the role of online communication in language teaching is still in its infancy, and the important research issues are still being defined. Research to date, though, indicates that online activities can support a number of important language learning objectives if the activities are implemented in a well-planned and purposeful manner. Planning should include the establishment of topics, tasks, projects, and organization that exploit the value of the Internet for goal-oriented communication, research, and publication.

Practice

The Internet is by its nature a dynamic and interactive medium that requires a high degree of flexibility and interaction. Research has indicated that online communication activities which are too highly restrictive, which focus on form to the exclusion of content, which insist on a high degree of teacher control, or which fail to allow students to pursue their own initiatives or interests will likely cause frustration and demotivation (Warschauer, 1998). At the same time, the highly decentralized and diverse nature of the Internet can make it a confusing and even chaotic medium for learners of English, especially those at the beginning level. Simply leaving learners to their own resources on the Internet is unlikely to bring satisfying results, as beginning learners drop out in frustration and more advanced learners stagnate at the level of conversational chatting or superficial "net-surfing."

Best online teaching practices take the contradictory nature of the Internet into account. Internet-based activities should be complex enough to allow for the kinds of interaction, collaboration, and autonomous decision-making that are well-supported by the medium. The activities should also be sufficiently structured to allow learners to achieve objectives without floundering or getting lost. These two points, taken together, mean that Internet-based projects and activities will likely be most successful when they reflect in-depth planning and integration. As Bruce Roberts, one of the coordinators of International Email Classroom Connections stated:

> There is a significant difference in educational outcome depending on whether a teacher chooses to incorporate email classroom connections as (1) an ADD-ON process, like one would include a guest speaker, or (2) an INTEGRATED process, in the way one would include a new textbook. The email classroom connection seems sufficiently complex and time consuming that if there are goals beyond merely having each student send a letter to a person at a distant school, the ADD-ON approach can lead to frustration and less-than-expected academic results--the necessary time and resources come from other things that also need to be done. On the other hand, when the email classroom connection processes are truly integrated into the ongoing structure of homework and student classroom interaction, then the results can be educationally transforming. (Warschauer, 1995, p. 95)

Online communication thus fits especially well with a structured, project-based approach which allows learners to engage in increasingly complex tasks throughout a course, in collaboration with partners in the same class or in other locations, and with appropriate scaffolding from the teacher or from other sources (including online resources). The types of projects which can be organized are varied, and may incorporate the following elements:

1. Interviews and surveys: Students work in teams to design, conduct, and interpret surveys or interviews of distant partners on social, cultural, or other issues (see, for example, Ady, 1995; Kendall, 1995)

2. Online research: Students learn to conduct research online to answer questions selected by the teacher or of to investigate matters of their own choosing (see, for example, Lixl-Purcell, 1995)

3. Comparative investigations: Students work in teams to investigate social, cultural, or economic conditions in their locality and to compare the results online (see, for example Livesy & Tudoreanu, 1995)

4. Simulations: Students work in teams on projects such as a model United Nations, business simulations, or contests to find the best solution to a real-world problem (see, for example, Feldman, 1995; Vilmi, 1995)

5. Online publication: Students work in teams to publish online newsletters, magazines, or documentary reports (Barson & Debski, 1996; Jor, 1995).

Such long-term projects can provide a meaningful and motivating context to frame learning activities throughout the semester. Within the context of the project, specific language-focused activities can be included, including those

related to reading, writing, research, vocabulary, grammar, and other skill areas. Classroom discussions, planning meetings, and oral presentations can help students develop aural-oral skills to complement the reading and writing skills which may be the focus of their online work.

Current and future trends and directions

Beginning in the late 1990s, there has been a gradual shift from seeing online communication as a tool to promote language learning toward seeing the mastery of online communication as a valuable end in itself. This reflects the increased prominence of online communication in society, with e-mail surpassing telephone conversation and even face-to-face conversation as a frequent tool of communication among some occupational groups (American Management Association International, 1998) and the World Wide Web rapidly expanding its presence and impact in fields ranging from academia to entertainment to marketing. Thus an important new future direction in both research and practice focuses on integrating the teaching of language skills and new *electronic literacies* (Warschauer, 1999).

Shetzer and Warschauer (2000) have categorized electronic literacies in three areas: communication, construction, and research. Communication involves Internet-based activities which allow people to converse with individuals and groups, and involves mastering the pragmatics of various forms of synchronous and asynchronous communication, both in one-to-one interaction and "many-to-many" electronic discussion forums. Construction involves the ability to work individually or collaboratively to write and publish information on the Internet, and includes mastery of hypermedia authoring (i.e., making a point effectively while combining texts with graphics or other media, all packaged in a non-linear, linked "hypertextual" format). Research encompasses a range of navigation, reading, and interpretation skills, including how to effectively search the Internet, how to evaluate information that you find, and how to critically consider multimedia information.

In summary, electronic literacies incorporate both information processing skills (e.g., navigation of the Internet) and rhetorical skills (e.g., writing a persuasive e-mail message). Taken together, these new literacies will be important in many languages, but in none more so than English as an estimated 85% of the electronically-stored information in the world is in the English language (Crystal, 1997). Several approaches for the development of electronic literacies are emerging. These include the fuller integration of electronic literacy skills in the "traditional" ESL classroom as well as the establishment of special content-based courses that are specifically based on combining a focus on language and technology.

Conclusion

Online communication is a new phenomenon, having first come into existence toward the end of the 20th century. It is growing at one of the fastest rates of any new form of communication in human history, and its long-term impact is expected to be substantial. A not uncommon, and, in my eyes, justifiable, view is that online communication represents the most important development in human communication and cognition since the development of the printing press (Harnad, 1991).

During the early years of the Internet, teachers began to think about how they could exploit online communication to promote language learning, and this effort will surely continue. However, it is increasingly clear that online communication represents for the field of TESOL much more than a useful pedagogical tool. Rather, online communication is a major new medium of English-language communication and literacy in its own right, and one that will likely affect the development of TESOL in important ways that we cannot yet predict. Both researchers and language teachers will do well to play close attention to the expanding and evolving role of online communication as it relates to the teaching, learning, and use of English.

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Keywords

Asynchronous computer-mediated communication:
Communication via computer that is not simultaneous, but delayed, as with e-mail.

Computer-assisted conversation:
Written discussion that takes place via computer networks

Computer-mediated communication (CMC):
Communication that takes place over computer networks

Electronic literacies:
Reading and writing practices in online environments.

IRF:
A common pattern of classroom discourse based on a teacher's initiation move, a student's response, and a teacher's follow-up. (Also know as IRE, i.e., initiation, response, evaluation.)

Synchronous computer-mediated communication:
Communication via computer networks which takes place in real time, such as online chat.