Electronic Tandem Language Learning (eTandem): A Third Approach to Second Language Learning for the 21st Century

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ABSTRACT

Tandem language learning occurs when two learners of different native languages work together to help each other learn the other language. First used in face-to-face contexts, Tandem is now increasingly being used by language-learning partners located in different countries who are linked via various forms of electronic communication, a context that has become known as eTandem. In addition to providing a brief account of the history of Tandem and eTandem, this paper provides a comprehensive overview of electronic communication media suitable for eTandem, both asynchronous and synchronous, from the telephone and email to amateur radio and business-quality videoconferencing. Finally, the Electronic Network for Language And Culture Exchange (ENLACE) is introduced, a Web-based medium through which users of Windows, Macintosh, and Unix-based computers can find language learning partners and engage in eTandem language learning using synchronous text chat alone or in combination with video and/or audio conferencing.

KEYWORDS
CALL, Tandem, eTandem, CMC, Videoconferencing

INTRODUCTION

Second language (L2) acquisition has traditionally been conceptualized as occurring in one of two different environments: formal and informal. Formal environments typically involve a classroom where a teacher (who may or may not be a native speaker of the target language) provides instruction and practice opportunities for a group of students using activities that are grammar based (form focused), communicative based (functional-notional), or some combination of the two. In contrast, informal (or “natural”) environments are those in which an individual acquires a second language as it is used as a medium of authentic communication outside of classroom settings, as when an individual moves to a country where the target language is spoken or lives with a native speaker of the target language.

Much research in L2 acquisition has attempted to provide a better understand-
of the process, potential, and limitations of L2 acquisition in these two settings. Although some studies have found that formal L2 instruction can have a positive impact on L2 acquisition (Long, 1983, 1988; Norris & Ortega, 2000) there remain lingering doubts concerning the effectiveness of formal L2 instruction (Doughty, 2003). What is clear, however, is that there are several limitations to L2 acquisition in a typical classroom setting. Five obvious limitations are (a) limited exposure to the L2, (b) limited opportunities for L2 production, (c) exposure to inaccurate, nonnative L2 as produced by fellow students, (e) limited opportunities for authentic L2 communication in a wide range of physical and sociolinguistic settings, and (f) the limited language ability and cultural knowledge of many nonnative L2 teachers who provide a less-than-ideal model of the L2 and its associated culture for learners. These limitations impose serious restrictions on the quantity, quality, and variety of L2 exposure, production, and practice opportunities that students have access to in typical L2 classroom settings.

In contrast, most informal, naturalistic environments provide extensive exposure to and interaction with native speakers of the L2 in a variety of authentic communicative settings and thus provide both a large quantity and variety of native-speaker L2 exposure and opportunities for L2 production. However, many adult learners placed in such settings do not develop very high levels of proficiency in the L2, and those who do typically retain nonnative phonological, lexical, syntactic, and/or sociolinguistic aspects in their L2 (Meisel, Clahsen, & Pienemann, 1981; Schumann, 1978a, 1978b). One reason for this may be that such L2 learners typically do not receive corrective feedback, either explicit or implicit, for any of the L2 errors they make.

There is, however, a less well known third environment for L2 acquisition, called Tandem language learning, that shares aspects of both natural settings and formal instruction and has the potential of combining the best aspects of both. Like informal L2 environments, it provides extensive exposure to the L2 as spoken by native speakers (and not other L2 learners) within authentic communicative settings with many opportunities for productive use of the L2. Like formal L2 environments, it also provides focus on form and corrective feedback to the L2 learner. And in addition to providing a promising context for L2 acquisition, it also has important potential benefits for developing intercultural understanding, autonomous learning skills, and technical abilities.

This paper has two primary purposes. The first is to introduce this third approach to L2 learning, Tandem language learning, to the many L2 students, teachers, and researchers who are unfamiliar with it, particularly those living outside of Europe. The second purpose is to show how recent technological advances have now made an electronic form of Tandem, known as eTandem, available to the countless number of language learners having access to the Internet.

TANDEM AND ETANDEM: DEFINITION, HISTORY, AND RESEARCH

Tandem language learning may take many forms (as we will see), but by definition it always involves language-based communication between two learners who are native speakers of different languages and who are learning each other’s lan-
language as a L2. As defined by (Brammerts, 2001), “language learning in Tandem occurs when two language learners with different native languages communicate with one another sharing the common objective of learning from each other” (p. 10, translated by d’Atri, 2002).

Brammerts further defines the two major principles that have guided Tandem: reciprocity and learner autonomy. Concerning reciprocity, “language learning in Tandem occurs in a learning partnership in which each partner contributes knowledge and skills that the other person wishes to acquire and in which both partners simultaneously support each other’s learning. The reciprocal dependence of each partner on the other requires that they work for each other and that both profit as much as possible from their common efforts” (p. 10, translated by Cziko). With respect to autonomy, “Each of the two partners is responsible for his own learning. He decides what, how and when he wants to learn and what kind of help he would like to have from his partner” (p. 10, translated by Cziko).

Tandem language learning does not have a very long history, that is, if we disregard the unorganized, informal reciprocal language learning that must have occurred even in prehistoric times when two speakers of different languages came into contact and felt a need to learn each other’s language for reasons related to cooperation, trade, religion, or marriage. As can be seen from the chronology of Tandem developments available at www.tandemcity.info/index2.html?direccion=general/en_history.htm, an organized form of Tandem first appeared in Europe in 1968 and was first put into practice as part of a French-German youth exchange program. Tandem originally involved face-to-face Tandem in which partners met in the same physical space and was often included in exchange programs involving students from two European countries with different languages.

In 1979, Jürgen Wolff implemented Spanish-German Tandem partnerships in Madrid, forming the basis of what was to become the TANDEM® Network in 1983. Originally involving language schools in 16 countries, these schools offered Tandem learning experiences in conjunction with the classroom language courses offered to their students.

Another major development occurred in 1992 when the Internet was first employed for Tandem, initially in the form of an English-German online discussion group created by Helmut Brammerts who, in 1994, founded the International Email Tandem Network in which 11 European universities originally participated. This network became the International eTandem Network in 1996 (see www.slf.ruhr-uni-bochum.de/etandem/etindex-en.html) in which the use of other electronic communication media were also explored. Now known as the International Tandem Network, it includes a total of 12 European universities located in Denmark, Germany, Portugal, Spain, France, Great Britain, Ireland, Sweden, the Netherlands, and Italy (see www.tcd.ie/CLCS/tandem/email/infeng01.html).

In 2000, a majority of the 23 member schools of the TANDEM® Fundazioa (established in 1994 by Jürgen Wolff in San Sebastián/Donostia in the Basque Country, see www.tandem-f.org) formed Tandem International. (www.tandem-schools.com), a new version of the Tandem Network whose member schools continue to offer Tandem learning experiences to their language students.
Finally, in 2004, the Electronic Network for Language and Culture Exchange (ENLACE) was established by this author. The purpose and operation of this system for worldwide synchronous eTandem learning is described later in this paper.

Despite its rather short history, a large number of research studies and reports have been published on Tandem language learning, both in its face-to-face and eTandem forms. An extensive, up-to-date bibliography of Tandem publications maintained by Brammerts (available at www.slf.ruhr-uni-bochum.de/learning/tanbib.html) includes well over 400 references. As an indication of Tandem’s European roots and its relative obscurity in North America, it is of interest to note that when searched in June 2003, not one of the above references appeared in any of the major North American second/foreign language research journals, including *Applied Linguistics*, *Language Learning*, *Foreign Language Annals*, *Modern Language Journal*, *Studies in Second Language Acquisition*, and *TESOL Quarterly*.

While space does not allow here a thorough review of research on Tandem, descriptions of the major research studies by institutions associated with the International Tandem Network can be found in the German-language volume edited by Brammerts and Kleppin (2001). These include descriptive studies of Tandem in both face-to-face and electronic forms undertaken in England, Germany, Ireland, and Spain, as well as evaluative studies conducted in England, France, Ireland, Mexico, the Netherlands, and Portugal (an English translation of the Brammerts and Kleppin volume is due soon). The only known study of Tandem conducted in the U.S. was an investigation of methods of coaching eTandem learners of Farsi, French, and German (d’Atri, 2002).

**FROM TANDEM TO eTANDEM: THE USE AND POTENTIAL OF ELECTRONIC TANDEM IN THE 21ST CENTURY**

While Tandem was first employed in face-to-face situations where pairs of learners shared the same physical space, recent technological developments now make it possible for Tandem language learning to take place between two individuals located anywhere in the world. Electronic communication media now makes eTandem available to millions of language learners living in places where face-to-face interaction with native speakers of the target language is unavailable or inconvenient. The emergence of eTandem is a particularly important development for the spread of Tandem language learning in the Americas where, compared to Europe, there are fewer major languages (Spanish, English, Portuguese, and French) spoken over much wider areas, making face-to-face Tandem less practical. This section will provide an overview of some of the many electronic media that can now be used for eTandem.

**Telephone**

Invented by Alexander Graham Bell in 1876, the traditional wired telephone can hardly be considered new technology. Nonetheless, the telephone can be a practi-
cal and useful tool for synchronous audio eTandem for many learners, even those with access to newer communication technologies.

The wired telephone has a number of important advantages for eTandem. First, it is widely available. Just about every home and workplace in the developed world has one or more telephones, and telephones are also widely available in the developing world. Second, the telephone can provide good quality, full-duplex audio communication with no perceptible delay between two eTandem partners anywhere in the world. The term “full duplex” refers to the fact that most telephone communication employs two channels of communication so that each party can speak and hear at the same time. This makes it possible for interlocutors to provide vocal feedback to and interrupt each other, as is done in normal face-to-face communication. Third, while the telephone is limited to audio communication, it can be combined with other media such as text chat and video conferencing to be discussed below.

The primary disadvantage to the use of the telephone for long-distance communication is that there is usually a cost associated with each minute of communication. But while long-distance telephone charges remain high in many parts of the world, low-cost telephone service is now possible between North America and Europe and from these two continents to many other countries. For example, using one of the many “virtual phone cards” marketed by Zaptel (www.zaptel.com) someone in the U.S. can call any country in Western Europe for as low as 5 cents a minute. This means that a U.S.-Europe tandem pair can talk for one hour for only $3.00, which is effectively reduced by half to $1.50 if each partner takes turns calling the other. Even cheaper rates are available for long-distance telephone service via a carrier that makes use of the Internet to connect users’ telephones (which is transparent to the user). For example PennyTalk (www.getpennytalk.com) charges a connection fee of 49 cents for each call. But per minute rates are as low as 2 cents a minute between the U.S. and all of Europe (including Moscow).

One potential disadvantage of the telephone for long conversations is that eTandem telephone partners may find it uncomfortable to use a standard telephone handset for long periods of time. The use of a telephone headset (available at electronic stores such as Radio Shack) eliminates this discomfort and allows the user to talk hands free. Hands-free telephone also allows eTandem partners to more easily combine the convenience and quality of telephone with synchronous Internet text chat (see below).

**Amateur Radio**

It was at the beginning of the 20th Century that amateur radio operators (“hams”) discovered that radio waves at high frequencies from 3.5 to 28 MHz could be used for worldwide radio communication. It was found that these high-frequency (HF) radio waves can be reflected by both the earth’s ionosphere and the earth’s surface so that under certain conditions even low-power signals could be used for Morse code and voice communication between two radio amateurs many thousands of miles apart. Amateur radio operators have since used the magic of HF radio com-
communication to create an international community of hams involving every nation on earth who engage in contests, share technical information, and “rag chew” (talk at length) on topics of mutual interest.

It is not surprising that as in many other areas, English has become the international language of ham radio operators worldwide and many hams from non-English-speaking countries have developed impressive proficiency in English through the medium of amateur radio. Many English-speaking hams have also exploited the global communications potential of amateur radio to learn other languages, including many U.S. hams using Spanish with Spanish-speaking hams residing either in the U.S. or south of the border.

It is unlikely, however, that the typical language learner will turn to traditional amateur radio for eTandem language learning opportunities. In all countries an examination must be passed to obtain a license to use amateur HF radio communication, an examination that tests technical radio and operating knowledge and may include a test of Morse code operating skill. Fairly expensive and complicated radio equipment along with sophisticated radio operator knowledge is necessary in order to establish reliable communication with distant stations. And even a well equipped, high-power amateur radio station is at the mercy of sunspot cycles, geomagnetic storms, and man-made sources of interference that can disrupt radio communication for extended periods of time.

However, new technological developments have begun to change all this as hams have now linked their radios to the Internet in order to establish reliable worldwide communication that does not require advanced technical knowledge, expensive equipment, or cooperative space weather. Two of the most popular radio-Internet linking systems are the Internet Radio Linking Project (IRLP) and EchoLink

IRLP (www.irlp.net) now links nearly 1,300 two-way radios and repeaters in 34 countries plus Antarctica. A repeater is a radio relay station that simultaneously receives weak signals and retransmits them with more power using a well located antenna. Repeaters have been used for decades to provide reliable local and regional communication to hams using two-way mobile and low-power hand-held radios. These same repeaters can now be used for reliable worldwide communication if they are linked to the Internet via IRLP. This means that a ham in central Illinois can use a small hand-held radio to communicate for free with another ham in Mexico, Germany, or Tokyo who is also located near an IRLP-linked repeater.

EchoLink (www.echolink.org) is similar to IRLP in that it can also link distant repeaters. But EchoLink is more flexible by making it possible for users to link directly to repeaters using EchoLink software from a Windows or Macintosh computer connected to the Internet. It also allows two or more computer-equipped users to connect to each other directly without using a radio or repeater at all (this mode also provides synchronous text chat). At last count there were more than 121,000 registered EchoLink users in 147 countries. So while Echolink use is still restricted to licensed amateur radio operators, a user with access to an Internet-connected computer does not even need a radio to make use of this system for worldwide audio communication.
Used in its computer-to-computer mode, EchoLink software is much like the synchronous audio Internet conferencing software described below. There are important differences, however. One is that all users must be licensed and identifiable on the system. Another is that all users have a common interest in amateur radio and communication technology and form part of a worldwide amateur radio community that that prides itself on international goodwill, cross-cultural understanding, and courteous communication practices.

The author (licensed in the U.S. as N9MJZ) has made extensive use of IRLP via radio and Echolink via both radio and computer for language learning. As a native speaker of English with knowledge of French, German, and Spanish, the author has been able to find native speakers of his foreign languages on IRLP or EchoLink at just about any time of the day with whom to practice his second language and who are often keen to practice their English with him. This contrasts with public-access chat and audio-conferencing software (described below) where it is usually more difficult to find a speaker of a desired language for one-on-one communication and where interactions are too often of a defamatory, sexual, or obscene nature.

So while the typical language learner is unlikely to turn to traditional HF amateur radio for Tandem language learning opportunities, these new radio-Internet linking systems are worth considering by anyone seriously interested in connecting to friendly other-language speakers worldwide at little or no cost. The license required in the U.S. to operate the frequencies used for the radio-Internet links requires only very basic knowledge of radio and operating procedures, and no Morse code test is required. (Information about licensing requirements in the U.S can be found at the web site of the American Radio Relay League at http://www.arrl.org/hamradio.html.) A basic VHF and/or UHF amateur hand-held radio can be obtained for about $100. And a radio is not even needed to connect to other users on EchoLink if an Internet-connected computer is available. The disadvantage of this mode of communication is that the communication is half-duplex with a noticeable delay when changing speakers. Another possible disadvantage (depending on one’s point of view) is that the majority of amateur radio operators are older and retired men.

**Computer-mediated Communication**

While telephone has ruled for well over a century as the predominant person-to-person telecommunications tool, the development of the personal computer combined with the emergence and rapid spread of the Internet now provides a much wider range of telecommunication tools useful for eTandem. The two main advantages of computer-mediated communication (CMC) is low or no per-minute cost (that is, in addition to the cost of the Internet connection) and the wide range of multimedia possibilities, including text, audio, and video in both asynchronous and synchronous modes. The disadvantages of CMC are the necessary computer equipment, Internet connection costs, and the complications of installing the necessary hardware and software.
Email

The earliest and still most widely used form of CMC is the asynchronous text medium known as email. And so it is not surprising that the first eTandem projects involved the use of email (the International Email Tandem Network begun in 1994 by Brammerts mentioned above).

eTandem involving email exchanges usually takes the form of language learners spending half their time writing each language. This gives each partner practice in writing the L2 and provides written models by a native speaker. Alternately, partners may decide to change language after each pair of email exchanges.

eTandem via email has some clear advantages. These include email’s wide availability and widespread use even by those who are not highly skilled computer users. Free email software and accounts are easily obtained and in many locations Internet-connected computers are provided at no cost by public libraries and educational institutions. Due to its asynchronous nature, email Tandem partners do not have to be online at the same time and can take the time needed to read, review, and respond to email messages. Email also provides a permanent record of exchanges that learners can later review and that researchers can analyze (Ushioda, 2000; Wooding, 1997).

Electronic Bulletin Boards

Internet-accessible bulletin boards are another possibility for asynchronous text-based eTandem learning. Probably the most popular collection of such bulletin boards are those provided by Yahoo Groups (groups.yahoo.com). Anyone with Internet access can set up a Yahoo Group for free. In addition to sharing text messages, a Yahoo Group also allows the sharing of files and photos. A search for Yahoo Groups using the terms “tandem” and “language” turned up two Yahoo Groups mentioning Tandem learning in their description: “languageeducation” and “tandemenglishfrancais” with 19 and 49 members, respectively. Neither group appeared very active. Because Yahoo Groups is an “advertising supported service,” users are subjected to frequent ads when using the system.

Another possibility for bulletin-board based Tandem learning is the Tandem Community (www.tandem-schools.com/index.php) developed by Tandem International (www.tandemcity.com). With over 400 members, the Tandem Community provides a forum for finding and communicating with Tandem partners using synchronous text chat and asynchronous text messages. Perhaps the most useful feature of the Tandem Community is its member list which includes information on members (including native and foreign languages, age, location, occupation, hobbies, and interests) and the ability to send a private message to any member (who must log on to the Tandem Community to see and respond to messages).

Chat

While the word “chat” originally referred to face-to-face vocal communication, in the world of CMC it describes synchronous text communication. First popularized by AOL Instant Messenger, chat involves two or more persons engaged in
text communication that appears on the other person’s screen either while it is being composed or (more usually) after the message has been typed and sent by the writer. eTandem via Internet chat involves two partners who attempt to use each language approximately 50% of the time. In addition to AOL Instant Messenger, many other free chat services are available, including Yahoo Messenger, MSN and Windows Messenger, PalTalk, and iVisit.

Internet chat is a communication medium that combines aspects of synchronous oral communication and asynchronous written communication. Like synchronous oral communication, chat occurs in “real time” between two participants and, in this sense, resembles an oral conversation, albeit in text form. But having to enter text slows down the pace of the conversation and leaves a visible record of the language used to which participants can easily refer both during and after the chat. However, no paralinguistic communication is possible via chat and the turn-taking rules present in oral communication may be different or entirely absent (see Blake, 2000; Fernández-García & Martínez-Arbelaitz, 2002; Smith, 2003; Lee, 2004). Like email, chat can provide a permanent visual record of eTandem interactions that can be reviewed by learners and analyzed by researchers. One important advantage of chat (and MOOs discussed below) is that because it is text based, no special computer equipment is needed.

**MOOs**

MOOs provide a unique context for CMC that has also been used for eTandem (MOO stands for “Multi-user; Object Oriented”). A MOO provides users with a virtual environment that they can explore and manipulate using synchronous text communication. A MOO usually has a theme, such as a city, college campus, or building. In addition to text communication, users can often enter text commands for navigating through the virtual environment and for displaying information concerning emotions. Although MOOs are being increasingly used for Tandem (see Schwienhorst, 1998), sophisticated computer skills may be needed to set up a MOO or obtain access to one (for more information about MOOs and their use in education, see www.marshall.edu/commdis/moo ). Two popular language learning MOOs are MundoHispano (www.umsl.edu/~moosproj.mundo.html) and Diversity Education (www.du.org).

**Audio**

Whereas text-based CMC programs use asynchronous or synchronous text as the medium of communication, audio-based CMC programs allow eTandem learners to engage in oral communication. Like text-based CMC, audio-based CMC also exists in both asynchronous and synchronous forms.

**Asynchronous Audio CMC**

One way of using asynchronous audio communication is to attach a voice recording to an email message. Although there are many ways to do this, the popular email program Eudora (which exists for both Windows and Macintosh in both
free and paid versions, see www.eudora.com) makes this especially easy by integrating the PureVoice player/recorder within its email functions. This means that Eudora users do not have to leave the email application in order to record and attach an audio message or to play a message sent by a Tandem partner.

In addition to the convenience of using PureVoice within Eudora, the PureVoice player/recorder also provides flexibility in recording and playing audio messages. When recording, users can listen to their recording and revise it before attaching it and sending it. The editing can involve recording over it completely or appending to what has already been recorded. In playback mode, PureVoice allows users to vary the speed of the recording, thereby allowing language learners to slow down the recording (without changing its pitch) to facilitate comprehension. And, of course, the recording can be played back unlimited times. PureVoice can also be used as a stand-alone program to record messages that can be sent using any email that permits attachments.

Another way to use asynchronous audio communication for Tandem is to make use of a Wimba voice board (www.wimba.com). A Wimba voice board allows users with a Java-enabled browser and microphone to leave and read/playback both text and audio messages. However, the Wimba voice board server software must be purchased and installed on a server and doing so is not inexpensive—the server software alone costs about $2,000 a year.

A Wimba voice board is more limited in its recording and playback capabilities than PureVoice described above in that users cannot append to an existing audio message and cannot vary the speed of playback. And like text-only message boards, the multiparty character of a Wimba voice board is not entirely consistent with the one-to-one philosophy of Tandem language learning, although it could be useful in matching two classes of students from different countries who are learning each other’s languages and cultures.

**Synchronous Audio CMC**

There are several free commercial programs that allow synchronous audio communication over the Internet. The best known and most used are AOL Instant Messenger (AIM), Yahoo Messenger, MSN Messenger, Windows Messenger, PalTalk, and iVisit. Cziko and Park (2003) recently reviewed these programs to determine their usefulness for language learners “and found that although the audio (and video) quality varied both among and within the programs reviewed, the communicative contexts created by these programs can provide second language learners with an inexpensive means for useful audio interaction with native speakers of their second language” (p. 15).

Any of these programs could be used for satisfactory one-to-one eTandem communication for Windows users, while Macintosh users are limited to AIM and iVisit. Each of these programs also allows synchronous text chat and could probably be used (in audio plus text chat mode) successfully for users with even relatively slow telephone modem connections to the Internet.
Synchronous video CMC

Of the six free Internet audio programs mentioned above and reviewed by Cziko and Park (2003), four also provide synchronous videoconferencing capability (the term “videoconferencing” as used here includes synchronous audio communication, even though video can be used without audio, as is done by deaf users of sign language). *Yahoo Messenger*, *MSN Messenger*, *Windows Messenger*, and *AIM* permit one-to-one video (along with text chat) for Windows users (*Windows Messenger* and *AIM* require Windows XP for video). *iVisit* is the most flexible program in that it permits one-to-one and multiparty videoconferencing (maximum of eight participants) for users of either Windows or Macintosh computers. Another free videoconferencing program not reviewed by Cziko and Park (2003) is the *Virtual Room Videoconferencing System* or VRVS (www.vrvs.org). Used for many years by physicists, VRVS provides excellent audio and video quality, even for large groups of users, and can be used with Windows, Macintosh, and Unix-based computers.

In order to have a satisfactory videoconferencing experience, users should have a high-speed Internet connection at least as fast as those typically provided by cable modems and DSL connections. And in addition to a microphone, a web cam is required in order for the user’s image to be seen by the cTandem partner. Usually connected to one’s computer via the USB port, web cams have been steadily dropping in price with good quality, medium resolution (at least 640 x 480 resolution is recommended) now available from manufacturers such as Logitech for as little as $30 to $40.

A major development in the evolution of consumer-oriented audiovideo CMC software that has occurred since Cziko and Park’s (2003) review is the introduction of Apple’s *iChat AV* software. *iChat AV* provides text, audio, and video communication with quality comparable to the much more expensive and bandwidth-hungry business-oriented H.323 products described below. It is also the only consumer-oriented audiovideo CMC program that provides echo-cancellation, permitting the use of loudspeakers and full-duplex audio with little or no audio feedback.

While delivering remarkable audio and video quality, Apple’s *iChat AV* does have some limitations. These include the fact that is compatible only with the Macintosh 10.2 and higher operating systems, handles only one-to-one connections, and requires a FireWire web cam (such as Apple’s *iSight*) or video camera making it incompatible with most existing web cams having a USB connection. Some of these limitations can be circumvented by using *iChatUSBCam*, a $10 program available from Ecamm Network (www.ecamm.com) that allows the use of USB web cams with *iChat AV*. *iChatUSBCam* also makes it possible to use slower Macintosh G3 computers (below 500 MHz) with *iChat AV*. *iChat AV* 2.1 can also be used to communicate with Windows XP users using *AIM* 5.5. *iChat AV* requires a broadband Internet connection on each end and does not allow the creation of user rooms as do *Yahoo Messenger*, *PalTalk*, and *iVisit* (see Cziko &
Park, 2003). *iChat AV* is included as part of the Macintosh 10.3 operating system (“Panther”) and costs $30 for users of Macintosh OS 10.2 (“Jaguar”).

In its current form, *iChat AV* is clearly the synchronous CMC product of choice for existing eTandem partners who both have fast Internet connections as well as the required Macintosh hardware and software. And while *iChat AV* has no integrated directory for finding potential Tandem partners, a number of independent directories have been created, including MyiSight (www.myisight.com) and iChatFinder (www.ichatfinder.com). MyiSight is particularly useful for eTandem learners in that it allows one to search *iChat AV* users from specified countries having video and audio capabilities (for example, using MyiSight, the author found over 30 iChat users located in France having video and audio capability). eTandem learners with *iChat AV* capability may also find the list of chat rooms provided by dotmac.info of some use (www.dotmac.info/index.html/chat/rooms) where group text chats in English, French, Spanish, German, Japanese, Hebrew, and Polish can be found. It is possible to enter these chat rooms and inquire if anyone present who has *iChat AV* capability would like to establish a one-to-one eTandem session.

Another option for synchronous video CMC over the Internet is the use of the protocol known as H.323. This protocol can provide “business-quality” video (full-screen and 30 frames per second) and good quality audio that is superior to anything yet available via the programs designed to run on a personal computer (with the possible exception of Apple’s *iChat AV*). Because of the high processing demands of H.323, these systems are usually either stand-alone “appliances” (made by companies such as Tandberg, Polycom, and D-Link) or use a camera unit with a built-in processor (such as Polycom’s ViaVideo) that attaches to a Windows computer. This results in much higher cost than using free software with an inexpensive web cam.

The Internet connection speed requirements for H.323 are also quite high so that even cable modems and DSL connections can be too slow (H.323 usually requires at least 384 kbps on both uplink and downlink for “business-quality” results). Linking more than two users using the H.323 protocol can be quite complex and usually requires additional hardware units called multipoint control units (MCUs). Finally, hardware-based H.323 videoconferencing does not provide text chat capability. For these reasons, H.323 videoconferencing is currently not a practical medium for most eTandem pairs despite the high-quality video and audio it can provide.

**THE ELECTRONIC NETWORK FOR LANGUAGE AND CULTURE EXCHANGE (ENLACE)**

For language learners with access to the Internet, CMC has great potential for eTandem learning. Two serious obstacles, however, are finding appropriate language partners with compatible technology and scheduling synchronous sessions with one’s partner. For a fee, MyLanguageExchange.com (mylanguageexchange.com) allows registered users to find partners. (The organization boasts having members from 130 countries learning 115 languages.) However, MyLanguage-
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Exchange offers no tools for scheduling meetings nor does it provide a common technology for synchronous communication. (The organization recommends *Pal-Talk* which cannot be used by Macintosh users.)

In order to make synchronous eTandem accessible to language learners worldwide, the author has begun the development of the Electronic Network for Language And Culture Exchange (ENLACE). Developed with support from the National Center for Supercomputer Applications and the University of Illinois at Urbana-Champaign, the goal of ENLACE is to make it easier for language learners to find and synchronously communicate with eTandem language partners via the Internet.

ENLACE consists of several interrelated components that are accessible to users of just about any modern Web browser. Users must first register on ENLACE and provide information concerning their first language and culture and the target (second) language(s) and culture(s). In addition, users indicate their preferred synchronous communication media, which can be text chat alone or text chat in combination with audio and/or video.

Users can then search the ENLACE database for an appropriate eTandem learning partner among other registered users. Once an appropriate eTandem partner is found, up to three meeting times can be proposed and sent to the selected partner. The chosen partner can then either agree to one of these times (with time zone differences computed by ENLACE) or propose up to three alternative meeting times. When a mutually convenient meeting time is found, ENLACE reserves a meeting room and later sends a reminder notice via email to the two eTandem partners as the meeting time draws near.

Macromedia’s Flash Communication Server is the communications heart of ENLACE, providing Web-based synchronous audio, video, and text chat communication for users of a Windows, Macintosh, or Unix-based computers. Internet-connected users require no software other than a Web browser and the *Flash Player* which is included in many browsers and can be downloaded free from Macromedia at www.macromedia.com/software/flash. A registered user entering ENLACE within 15 minutes of a scheduled eTandem session will be ushered to a waiting room and then automatically connected to the reserved meeting room at the scheduled time. The two eTandem partners then have use of the room for up to one hour for any combination of text chat, audio, and video conferencing for their eTandem session.

ENLACE is currently available to the language students of cooperating instructors at institutions of higher education worldwide. Language instructors who are interested in making ENLACE available to their students should contact the author for access. Future plans call for making ENLACE available to primary and secondary school students as well as to autonomous adult learners of foreign languages and cultures.

CONCLUSION

The 21st Century dawns as a particularly exciting time for students, teachers, and researchers interested in the learning of foreign languages and cultures. As inter-
national trade, travel, and business increase, so does the need for knowledge of foreign languages and cultures. And as the Internet continues its growth, linking institutions, businesses, and homes around the globe, so grows as well the need for knowledge of foreign languages and cultures.

It can be considered a lucky coincidence that as the growth of technology has increased the need for knowledge of foreign languages and cultures, this same growth has also provided new resources and means by which this knowledge can be obtained. Electronically linking distant pairs of learners who are learning each other’s language is an obvious way to improve knowledge of foreign languages and cultures. It is therefore surprising that eTandem is not more widely known and used by learners and teachers or investigated by researchers in the Americas.

The major goal of this article is to make eTandem both better known and more accessible to students and encourage researchers to investigate its potential. It is hoped that ENLACE will be the first of several global Internet-based projects that will be successful in attracting large numbers of language learners to an exciting new development in eTandem—synchronous text, audio, and video conferencing that is now available to anyone with a personal computer connected to the Internet.

REFERENCES


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