



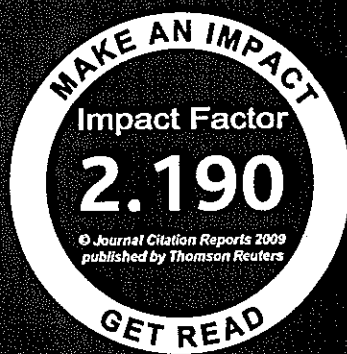
Computers & Education

An International Journal

Editors

Rachelle S. Heller

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Comparing six video chat tools: A critical evaluation by language teachers

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ABSTRACT

This article presents a critical comparison of the usefulness and practicality of six CMC video chat tools (CUworld, ICQ, MSN Messenger, Paltalk, Skype, and Yahoo Messenger) from the perspective of language teaching professionals. This comparison is based on the results of a semester-long project between graduate students at an American university and their counterparts at a university in Turkey. The language teachers were asked to pair up with a partner in the collaborating university to test and then evaluate each of these tools via video chat tool evaluation sheets. They also completed an overall evaluation sheet commenting on CMC tools in general and ranking the video chat tools in terms of their potential as language teaching tools and their usability for personal communication purposes. The qualitative and quantitative analyses of the evaluation sheets indicate a clear preference for MSN Messenger and Skype while placing CUworld and Paltalk at the bottom of the list. The article also provides pedagogical implications and applications for using tools for language teaching purposes.

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1. Introduction

Over the past few decades there has been a revolution in communications technology brought about by the development of the Internet and the many programs that have been created to make use of it, ranging from the earliest simple forms of email to the latest in video chat. All of these tools fall under the categorization of computer-mediated communication (CMC), which refers to both asynchronous communication² such as email and message boards, and online synchronous communication, which might utilize tools such as text chat, audio and video telephony programs such as Skype, or video conferencing.

This paper presents a critical comparison of the technical, communicative, and usability aspects of one form of synchronous communication—video chat—for computer-mediated language learning via an examination of six popular programs conducted by language teaching professionals. The examination and evaluation of video chat tools was an integrated part of a semester-long international classroom collaboration on CMC for language teaching in which two classes of graduate students, who are all current or future language teachers, were paired up for synchronous video CMC to talk about issues pertinent to language teaching. One of these courses was a TESOL technology course at a large Midwestern American university and the second one was an ELT technology class at a large university in Ankara, Turkey.

1.1. The need for investigation

There is a growing movement to make use of computers to engage in authentic communication with native speakers and/or other language learners, and there is an increasing body of research into synchronous forms of CMC, particularly on the use of text-based chat (e.g., Bearden, 2003; Freiermuth, 2002; O'Dowd, 2003; Perez, 2003; Smith, 2001; Tudini, 2003; Williams, 2003). However, the research on more technologically advanced forms of CMC such as audio (Cziko & Park, 2003; Hampel & Hauck, 2004; Kötter, 2001a; Kötter, Shield, & Stevens, 1999; Lamy, 2004) and video chat has been much more limited, and has often been descriptive in nature. The project reported here fills this

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² Asynchronous communication does not take place in real time (e.g., email), while synchronous communication takes place in real time (e.g., a telephone call).

Table 1
Video chat tools and URLs.

Video chat tool	Location
CUworld	< http://www.CUworld.com >
ICQ	< http://www.icq.com >
MSN Messenger	< http://get.live.com/messenger/overview >
Paltalk	< http://www.paltalk.com >
Skype	< http://www.skype.com >
Yahoo Messenger	< http://messenger.yahoo.com >

important gap in the research by investigating the usability of the latest in CMC technology, video chat, by comparing video chat tools via both quantitative and qualitative methodology.

Most of the previous studies examining the role of video in language learning have relied on dedicated systems not available to the general public that were developed by universities. Some of these, such as a study performed by Kinginger (1998, 1999) utilized teleconferences requiring specialized equipment, such as video cameras and television monitors. One problem with this use of video is that it required several dedicated phone lines to carry the video images; resulting in a \$322 charge (Kinginger, 1998, p. 504), a cost that would still be a burden today. Goodfellow, Jefferys, Miles, and Shirra (1996) used a similar system and also mentioned this fee as a limiting factor. It is worth noting that the cost of teleconference connections has now been drastically reduced due to the availability of teleconference systems that make use of IP connections rather than dedicated phone lines, with the connection costing nothing.

In the mid to late 1990s there were a number of projects developed which utilized the rapidly developing Internet. These included the Remote Language Teaching (ReLaTe) project between two schools in England (Matthews, 1998); the high performance networked multimedia for distributed language learning (HIPERNET) project, which included seven partners from six European countries (McAndrew, Foubister, & Mayes, 1996); and the LEVERAGE project, which provided video connections between participants in Madrid, Evry, and Cambridge (Egert, 2000). These projects all involved the use of groups of individual computers in labs, with each computer outfitted with its own camera, microphone, and headset. At that time this required specially built computers, utilizing custom designed software, which utilized very limited networks.

Perhaps the most important recent change in this technology is the increasing availability of free programs for video chat. One of the earliest, Netmeeting, was integrated into the Microsoft Windows operating system. Since that time, there has been an explosion of these tools, but there has been very little research at this point into the applicability of these programs for educational use. One notable exception to this is a study by Wang (2004), who did a preliminary evaluation of four programs—CuSeeME, ICUII, Video VoxPhone Gold, and NetMeeting—before selecting Netmeeting for use in her primary study. While she found that the video quality was of a “[high] and consistent quality” her participants had more mixed reactions, with one finding the image “not clear at all” (Wang, 2004, p. 102).

Given the very limited research on the use of new video chat technologies, and their potential importance for both in-class and personal language learning, additional studies that provide critical reviews of these tools are crucial. The focus of this project is on evaluating the technical aspects of popular video chat programs to determine their usability and practicality for both personal and professional usage. With its focus on technical issues, such as audio–video quality and practicality of set-up procedures, this study aims to provide guidance for language teaching professionals who are interested in integrating this technology into their classroom practices. The results of this project will enable these teachers to make informed decisions about which tool(s) to choose for their pedagogical purposes, and it will save time that may be wasted in trial-and-error processes.

1.2. Research questions

The project which formed the basis of this critical comparison evaluated six CMC video chat tools (see Table 1), including an examination of the technical, communicative, and pedagogical usability of the tools in order to answer the following questions:

1. What programs are freely available for engaging in synchronous video chat?
2. How different are these tools from each other in terms of technical issues, such as audio–video quality, set-up procedures, etc.?
3. How suitable are these programs for personal communication and for language teaching purposes according to language teaching professionals?
4. How could language teaching professionals incorporate these programs into their language teaching practices?

2. Materials and methods

This video tool evaluation involved an international collaboration between students in two graduate level classes focusing on instructional technology in language teaching offered at a large mid-western university in the United States, and a large English-medium university in Ankara, Turkey. The two classes were scheduled to overlap for one and a half hours every week in order to make synchronous communication a possibility between the students enrolled in these two courses.

The courses paralleled each other in terms of course description and purpose, weekly schedule and readings, and assignments and tasks. A total of 18 students participated, eight from Turkey, and 10 studying in the US. All 15 non-native speaker participants (eight in Turkey and seven in the US) had high levels of English proficiency. The courses examined a number of CMC tools, ranging from message boards to virtual worlds, and 3 weeks of the semester were devoted to video chat.

Table 2
Video chat tools.

Video tool	Audio	Video	Community/chat rooms	Minimum software requirements	Minimum hardware required
CUworld	Multi-party Full-duplex	Up to four video windows at once ^c	Yes	Windows 98, 2nd edition IE 6.0	Pentium II 450 MHz, 128 MG RAM, 56 k modem ^a
ICQ	1-1 Full-duplex	1-1	Yes	Windows XP IE 6.0 Flash 7.0 ^b or Max OS8	256 MB RAM ^b
MSN Messenger	1-1 Full-duplex	1-1	No	Windows XP SP2 or later or OS X version 10 or later	Minimum 128 MB of RAM (256 MB or more recommended)
Paltalk	Multi-party Half-Duplex	1-1	Yes	Windows 2000	128 MB RAM
Skype	Multi-party Full-duplex	1-1	No	Windows 2000	1 GHz processor, 256 MB RAM ^b Broadband Internet ^b
Yahoo Messenger	Multi-party Full-duplex	Multi-party	Yes	Windows XP or Max OS 10.4	Not specified

^a Minimum requirement for free version. Suggested requirements higher.

^b Recommended.

^c Paid versions of CUworld, ICQ, and Paltalk offer additional features.

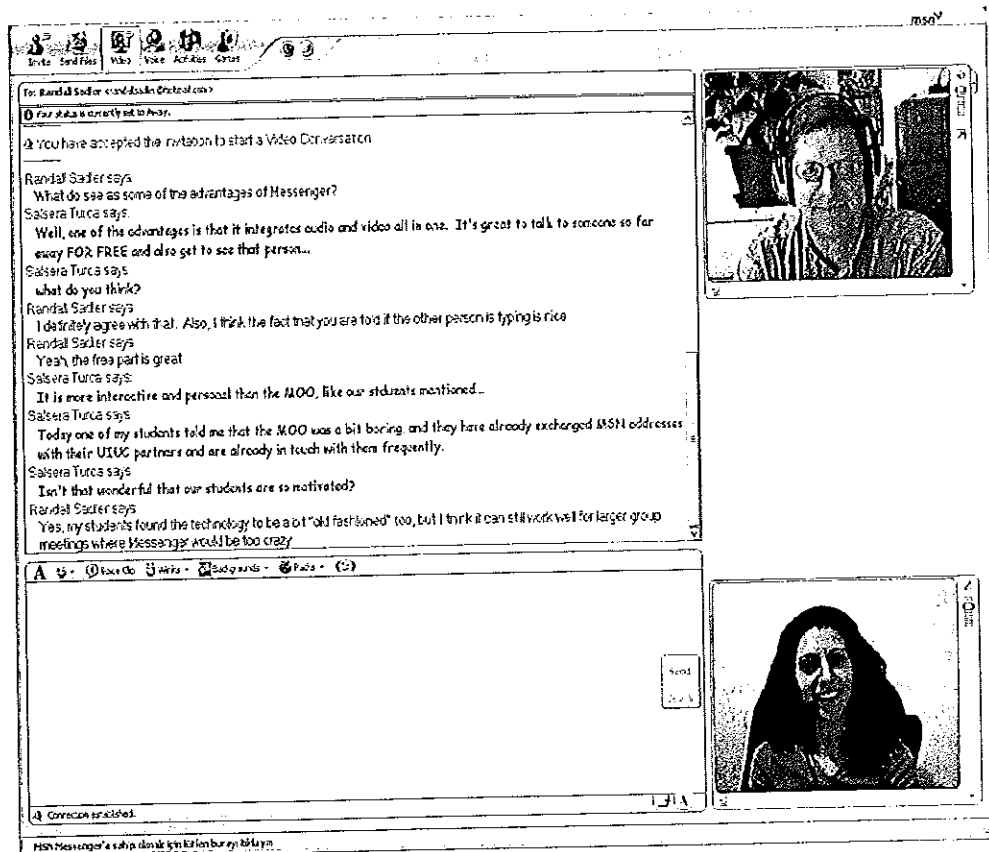


Fig. 1. MSN Messenger screen.

The six video chat tools were selected because they are some of the most well-known ones and represent a variety of features, as described in Table 2 below. These tools were also selected because they are available to the general public, unlike the video tools utilized in a number of previous studies.

Three of the programs examined in this investigation—MSN Messenger, Skype, and Yahoo Messenger—share a very similar layout, as seen in the screenshot from MSN Messenger in Fig. 1.

These three tools all share the same basic design layout, and they all allow both audio and/or video chat. In the case of video chat, these programs allow for only one-to-one communication, although Skype does allow for multi-party audio chat with no video.

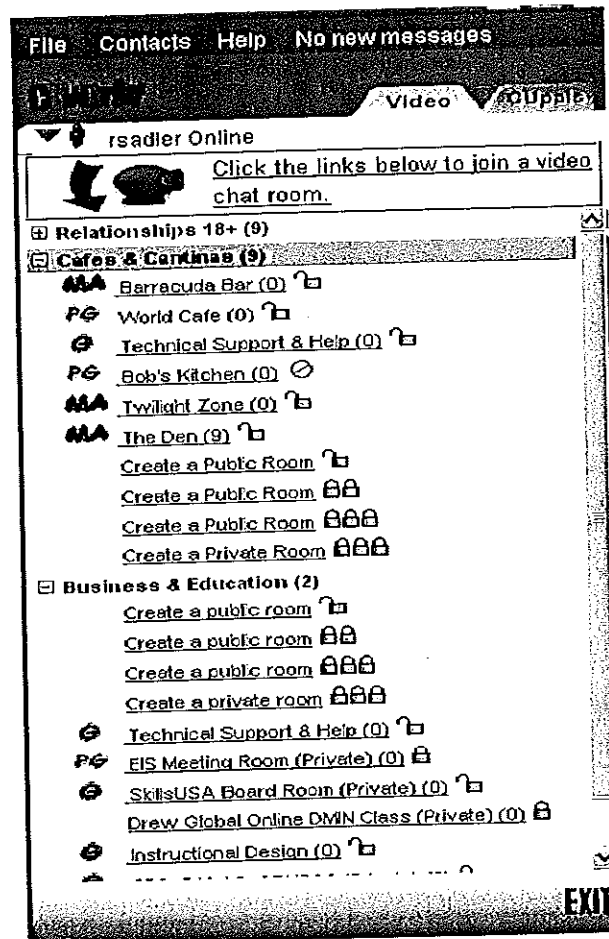


Fig. 2. CUworld Messenger.

The other three tools examined, CUworld, ICQ, and Paltalk, also integrate text, audio and video chat features, but have a much stronger focus on the community aspect of the technology. For example, CUworld presents its users with multiple chat rooms focused on a variety of interest areas (see Fig. 2: CUworld Messenger), and Paltalk allows its users to join chat rooms that focus on learning specific languages, such as Arabic, English, Spanish, and many more.

However, as can be seen above, many of the most popular rooms in all three of these programs focus on "relationships," "romance," or "adult" themes—perhaps a good place to learn English, but not of an academic variety. While such rooms are often labeled, as in the case of CUworld, there is no guarantee that a "G" rated room will truly contain only "G" rated language.

In order to complete the evaluation, the students were placed into dyads or triads with each group consisting of a Turkish participant and at least one from the US. During the evaluation process, the participants were instructed to "not" discuss the technical issues of the programs they were using in order to prevent biasing the results of their survey answers. Instead, they were asked to use the tools in order to engage in a discussion of the pedagogical implications of using technology, including video chat, to enhance language learning. In addition, they were asked to share their ideas for potential lessons (see Section 3.3) utilizing the technology. These ideas were later developed into units which were shared with the participants in all the groups. This process focused the students attention on evaluation how well (or how poorly) each of the video chat tools aided in their communicative task.

After using a program to communicate with their teammates, each participant filled out a 28-item questionnaire for that program, including five items related to quality of connection, 19 Likert scale questions, and four short answer follow-up questions (see Appendix A). The questionnaires collected information in two main areas: technical aspects of the programs (e.g., ease of installation, availability of technical support) and communication aspects (e.g., quality of audio and video connections, opinion regarding the potential of the tool for personal and educational use). Each participant filled out six copies of the video chat tool evaluation sheet (one for each tool), resulting in 108 copies of this questionnaire (total = 3024 item responses). The participants were also given a six question overall evaluation sheet (see Appendix B) that asked them to rate and rank the tools for their potential for personal and classroom communication. This resulted in a total of 108 responses.

The language teachers who participated in the evaluation process of these CMC tools also included written comments in the questionnaires. The purpose of asking for written comments was to give the evaluators a chance to express their opinion about the video chat tools regarding issues that may not have been covered by the Likert part of the questionnaire. In addition to this data, follow-up questions were asked as needed either via email or face-to-face interviews (pseudonyms used for all participants in this study).

The data were analyzed via quantitative and qualitative approaches. A one-way within-subjects ANOVA was conducted to examine whether there was a significant difference between the total scores of the six CMC video chat tools as determined by the participants' rankings of the tools on the *overall evaluation sheet*. In order to do a between-tools comparison of the total scores each tool received on the *video chat tool evaluation sheet* and to report which scores were significantly different among the video chat tools with 95% confidence, paired samples *t*-tests on 15 combinations of video tool pairs (e.g., MSN-Skype; ICQ-Yahoo MSN, etc.) were run.

The written comments of the participants on the open-ended sections of the questionnaires were analyzed following the procedures of Grounded Theory as suggested by Strauss and Corbin (1998). The comments were categorized depending on their foci about the programs: comments on the audio-video quality of the tools; comments on technical problems encountered during video chat sessions; and general suggestions about whether and how to use each tool for personal and pedagogical purposes. The comments that fell under the same categories were compared and contrasted for each tool to compliment the quantitative analyses of the data.

3. Results

3.1. Comparative evaluation of the technical aspects of the tools

This section of the article presents the critical evaluation and comparison of the six video chat tools by referring to the analyses of the video chat tool evaluation sheet and questionnaires completed by the participating language teachers.

3.1.1. Total score and ranking comparison of the video chat tools

As mentioned in the previous section, a one-way within-subjects ANOVA was conducted to see whether there was a significant difference between the total scores of the six video chat tools. The total score of each tool was created by adding together the answers of the participants for the 19 Likert questions for each program, and then adding together all of the participants' scores for each program, resulting in a possible mean score of 95 points for each program. The results of the ANOVA indicated that MSN Messenger ranked highest among the programs, while Paltalk ranked last (see Table 3). This test also showed that there was an overall significant difference

Table 3
Means, standard deviations, and ranks of CMC video chat tools.

Video chat tool	<i>M</i> (over 95)	SD	Rank
MSN	80.50	13.10	1
Skype	76.55	9.30	2
Yahoo	56.44	14.23	3
ICQ	46.77	15.20	4
CUworld	41.83	15.16	5
Paltalk	35.61	16.63	6

$$\begin{array}{rcl}
 \text{MSN Messenger} & = & \text{Skype} \\
 & & \text{Yahoo} = \text{ICQ} \\
 & & \text{ICQ} = \text{CUworld} \\
 & & \text{CUworld} = \text{Paltalk}
 \end{array}$$

Fig. 3. Relative rankings of the six programs.

Table 4
Technical and usability issues of the programs.

	Items on the questionnaire	CUworld	ICQ	MSN	Paltalk	Skype	Yahoo
Tech issues	Website user friendly	2.29 (6)	3.18 (5)	4.18 (2)	3.27 (4)	4.39 (1)	3.67 (3)
	Easy to install	2.41 (6)	3.41 (5)	4.73 (1)	3.73 (4)	4.44 (2)	4.00 (3)
	Easy to setup	2.59 (6)	3.44 (5)	4.67 (1)	3.73 (4)	4.38 (2)	4.00 (3)
	Good help/support	2.90 (3)	2.80 (5)	3.67 (1)	2.40 (6)	3.73 (2)	2.85 (4)
User issues	Easy to use	2.53 (6)	3.00 (4)	4.69 (1)	2.64 (5)	4.28 (2)	3.65 (3)
	Easy to add members	3.18 (6)	3.29 (5)	4.53 (1)	3.53 (4)	4.06 (2)	4.06 (2)
	Easy to start a conversation	2.82 (5)	3.06 (4)	4.67 (1)	2.60 (6)	4.50 (2)	3.44 (3)
	Easy to see if others were online	3.33 (5)	3.81 (4)	4.82 (1)	3.13 (6)	4.35 (2)	4.12 (3)
	Average	2.75	3.25	4.50	3.13	4.27	3.72
	Average rank	5.36	4.25	1.13	4.89	1.89	3.00

Table 5
Negative feelings towards programs.

	CUworld	ICQ	MSN	Paltalk	Skype	Yahoo
Frustrating to use	3.65 (5)	3.24 (4)	1.78 (1)	4.27 (6)	1.83 (2)	3.11 (3)
Confusing to use	3.71 (5)	2.81 (4)	1.78 (1)	3.80 (6)	1.83 (2)	2.56 (3)

Table 6
Audio–video quality comparison of programs.

	CUworld	ICQ	MSN	Paltalk	Skype	Yahoo
Quality of audio	1.56 (6)	2.11 (4)	4.44 (1)	1.78 (5)	4.17 (2)	2.28 (3)
Quality of video	1.72 (4)	1.44 (5)	4.39 (1)	0.50 (6)	3.89 (2)	1.89 (3)
Audio and video difference	+0.16	-0.67	-0.05	-1.28	-0.28	-0.39
Percentage change	+3.2%	-13.4%	-1.0%	-25.6%	-5.6%	-7.8%

between the total scores of the video chat tools on the Likert-type questions of the survey, Wilks' $\Lambda = .1$, $F(5, 13) = 24, 2$, $p < .05$, multivariate $\eta^2 = .90$.

The paired *t*-tests that were run to do a between-tools comparison of total scores and to examine which scores were significantly different among the tools indicated that 1st ranked MSN ($M = 80.5$) and 2nd ranked Skype ($M = 76.55$) had significantly higher scores than all other video chat tools, but that the differences between the scores for MSN and Skype were not significant ($p = .208$, $\alpha = .025$). This is shown in Fig. 3, where MSN Messenger and Skype are shown at the same level, and above the other programs. The relative position of the programs from left to right also indicates their overall score, with MSN receiving the highest and Paltalk receiving the lowest. Yahoo followed MSN and Skype with the 3rd highest score ($M = 56.44$) which was significantly lower than either MSN ($p = .00$, $\alpha = .004$) or Skype ($p = .00$, $\alpha = .006$). Yahoo was not significantly different from the 4th ranked ICQ ($p = .97$, $\alpha = .0125$), but Yahoo's score was better than either CUworld or Paltalk. ICQ was not significantly higher than 5th ranked CUworld ($p = .362$, $\alpha = .05$), but it was higher than 6th ranked Paltalk. For this reason, ICQ is listed as being at the same level as ICQ and also CUworld. CUworld and Paltalk were not significantly different in their overall scores ($p = .228$, $\alpha = .016$).

3.1.2. Technical and usability issues comparison of the video chat tools

The analysis of the questions that focused on technical aspects and usability issues showed that MSN Messenger ranked as the top tool among all the technical and usability questions except for the one related to the user friendliness of the website (see Table 4 for results). Skype, again with the exception of the first question, ranked a consistent number 2. Yahoo ranked #3 in 7 out of 9 questions. Since most informants had already used Skype, MSN Messenger, or Yahoo, they found programs with the more "traditional" chat layout that they were already familiar with to be easier to use than the others. Among the remaining tools the picture is not quite as clear, with CUworld having the lowest average, preceded by Paltalk and ICQ. As seen in Table 4, the one major exception to CUworld's ranking is for tech support, where it ranked 3rd.

When asked to rate the programs in terms of how frustrating or confusing they were to use, the informants indicated that MSN Messenger was the least frustrating and confusing program, followed by Skype and Yahoo. However, there was a change in the lower half, with Paltalk ranking as the most frustrating, and CUworld being 5th (see Table 5 for detailed results).

3.1.3. Audio and video quality comparison of the video chat tools

The questions pertaining to the audio and video quality of the programs received relatively similar answers from the informants (see Table 6). MSN, Skype, and Yahoo continued their top three status, with MSN showing very little difference between the quality of the audio and video, while Skype and Yahoo had greater differences in the audio versus video quality. CUworld, ICQ, and Paltalk had more muddled findings, with none of these programs having the same ranking in both audio and video.

The most striking decline between audio and video quality was seen with Paltalk, with a -1.28 (-25.6%) drop, indicating that the informants found the video quality to be of a much poorer quality than the audio. This is largely due to the fact that the video component is severely limited with the free version of the program, with only short video segments (approximately 5 s) allowed. The only program that had a higher score for video than audio was CUworld, which allowed the users to view up to four videos at the same time.

3.2. Comparative evaluation of the suitability of the programs for personal communication and language teaching purposes

As detailed in the previous section, the statistical analyses of the Likert-scale items and ranking inquiries in the video chat tool evaluation sheets and the video chat tool overall evaluation sheets signal that the participants preferred certain programs due to their technical superiority or practicality. The analyses of the items pertinent to using the programs for personal communication and language teaching purposes yielded similar results, supported by the written comments provided by the participants in the *video chat tool evaluation sheets*.

While reporting the participants' program preferences for personal and academic purposes, we will divide the tools into three groups based on overall ranking: the lower third (Paltalk and CUworld), the middle third (ICQ and Yahoo Messenger), and the upper third (Skype and MSN Messenger). As will become apparent from the comments of the informants, these tool groups share important characteristics that also help to explain their representative rankings.

3.2.1. The lower third

One characteristic that these two tools share in common is that they all fall under the *community-oriented* category for video chat. The question to be answered is whether the informants found this to be an unwelcome characteristic or if other elements of the programs resulted in their low scores.

Paltalk was the lowest rated tool for video quality ($M = 0.5$) and had the second lowest score for audio quality ($M = 1.56$). The participants were mostly frustrated by the fact that while Paltalk could be used at no cost, this free version was severely limited in comparison to the other video tools. As Adil explained, "Paltalk offers nothing, but charges you a lot. I wonder are there any people who are so rich to subscribe to Paltalk in order to make use of audio and video messaging facilities which are offered free by other software in a more advanced way." A number of informants made similar comments, stating that the audio quality was "bad" and that the video chat function worked for only 10 s in the free version, which was not really enough to evaluate its quality completely. They also strongly criticized the button-based turn-taking system of Paltalk which they thought was annoying. In this system it was necessary to hold down a button to talk, and then release it to hear one's partner.

The 5th lowest score went to CUworld ($M = 41.83$), and the primary reason for this was student frustration in using the program, often due to technical difficulties. In addition to the low quality of audio and video aspects, CUworld was also criticized for the difficulty of its installation and set up procedures by almost all the informants who complained that the program asked for too much personal information for registration; installation was long, slow, and tedious; the video quality was very bad; and the constant pop-ups were annoying. This is not to say that the participants did not see some potential benefits. Some, like Petek, complained about video quality, but also liked the fact that "four people can have video conversation together at the same time." Another criticism of CUworld, and the other community-oriented video tools, was that they often included R-rated or X-rated content. Several of our informants were approached in an explicit manner during their evaluation of the tools, which made them uncomfortable.

As seen above, the teachers had, at best, mixed reactions to the community-oriented programs. They had a number of technical difficulties and found both the audio and video to be of consistently low quality. However, it is important to note that that Paltalk and CUworld, the bottom-ranked programs, were evaluated using the free membership level of the services. Each of these also has two paid membership levels, which offer increased audio and video quality. These higher membership levels also offer features like video chat with 10 or more members and, in CUworld, the ability to set up private chat rooms. That said, we felt evaluating the free versions was important since many students may not be able to pay for those services.

3.2.2. The middle third

The tools in the middle third do have a community component, but not to the same extent as either Paltalk or CUworld. However, one important difference is that neither ICQ nor Yahoo requires paid accounts to make use of the full communication potential of the tools.

ICQ was ranked 4th in the overall evaluation of the teachers although the differences between the total score for this program ($M = 46.77$) and that of CUworld was not statistically significant. While the informants called the audio quality for this program "average"

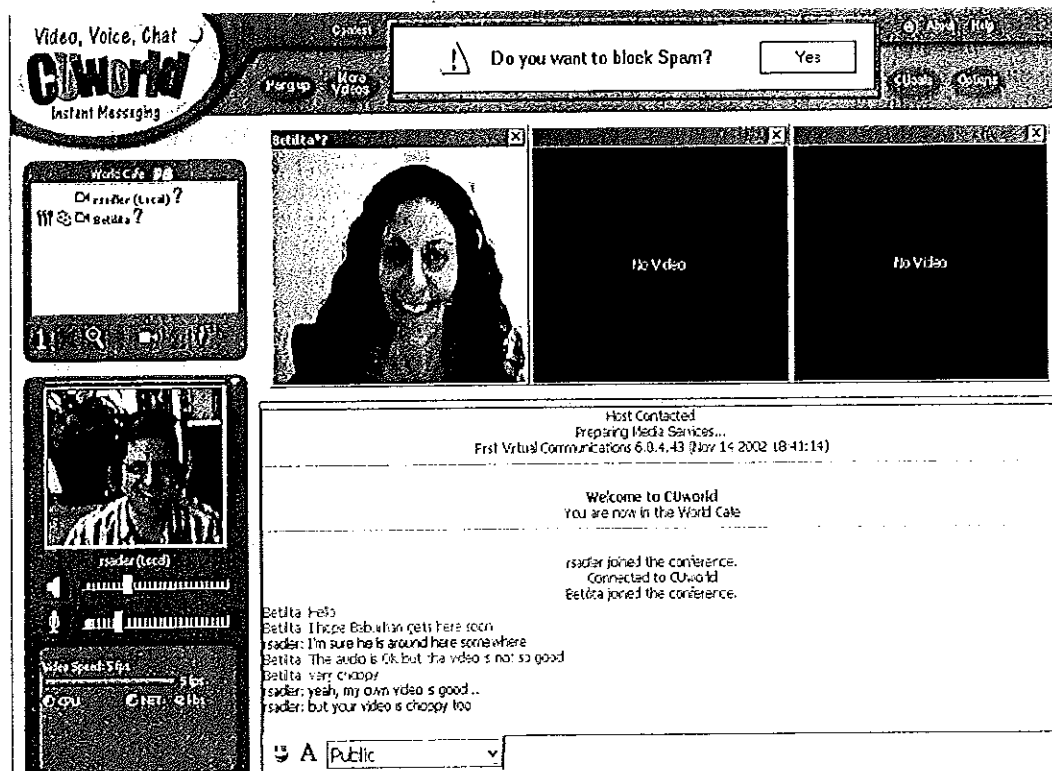


Fig. 4. CUworld chat screen.

($M = 2.11$), they found the video quality to sometimes be extremely poor ($M = 1.44$), as Petek explains: "The audio and video connection on ICQ is not really satisfying. The video frequently freezes and it becomes like a normal picture then. When the video collapses, the audio also starts to give problems as well and you cannot hear the person either. That's why; we ended up writing text messages in the end while chatting". Some informants also criticized ICQ for not having a user friend website and because the authentication and sign-in processes were overwhelmingly complex. Adil commented that having numbers as a character identifier instead of nicknames as in the other programs made them feel "like prisoners."

Although some teachers expressed frustration with 3rd ranked Yahoo ($M = 56.44$), in comparison to Paltalk and CUworld it was not as exasperating to use. However, the audio-video chat components were not as strong as those of MSN and Skype. Edward's following comment clarifies why the informants were dissatisfied with the audio ($M = 2.28$) and video ($M = 1.89$) components of this program: "The audio was very high pitched for some inexplicable reason. Idil sounded like a chipmunk and said my voice was high pitched as well." The informants' comments clearly showed that while agreeing to its relative ease of usage for certain aspects, Yahoo was no alternative or competition for other IM services like MSN and Skype.

As for positive aspects of Yahoo, some informants mentioned that they liked that it allowed sending messages to people even when they are offline, a feature now available in MSN Messenger as well. They also praised the colorful screen, emoticons, feedback requests, and connections to other Yahoo services such as Yahoo! Chat, which contains a variety of chat room. When asked what they disliked about this program, some mentioned that Yahoo sets itself as the browser's home page and the default search engine, which changes the personal settings of many users, and installs unwanted additional software to the host computer during installation.

Although it was not statistically better than ICQ, Yahoo did receive higher scores for technical aspects and better reviews from the informants. At the same time, ICQ ranked higher than Paltalk or CUworld because it allows for multiple-party video chat that at least seemed to work without having to pay for a higher membership level, as seen in Fig. 4.

While only two of the video screens are active in Fig. 4, there are two additional video windows (black in Fig. 4) available. It is clear that neither of these programs had video that was of a consistently high quality, but they were definitely superior to the lower third. At the same time, while the community component is neither as strong nor as integrated as that of the lower programs, it still exists. However, the chat rooms for these two tools only focus on text chat. In both cases, learners may utilize their program menu to connect to preexisting groups focusing on a number of topics, including language learning. However, in a recent visit to the ICQ chat room on "English," which focuses on learning the language, several problematic issues became evident. First, as with the lower two programs, almost immediately upon logging in, it was clear that a significant percentage of the conversation was sexual in nature. Second, this chat room had 222 participants at that time. Although many there were no doubt lurkers, the pace of the text chat was very rapid and hard to follow, especially for English learners/speakers with low proficiency.

3.2.3. The top third

Skype and Messenger ranked at the top of the list in terms of audio and video chat, and both programs are entirely free. On the hand, neither of these tools has an integrated community component. Skype received the second highest scores for both audio ($M = 4.17$) and video (M), and the informants agreed that they would recommend Skype to their friends, fellow teachers, and students to be used for personal and academic purposes. Skype also got scores higher than 4.00 from all the categories related to the technical issues about the program. Although there were a few unsatisfied participants, mostly due to connection speed and camera quality, most of them were pleased with the sound and video quality of Skype. They also claimed that they liked this program as much as they did MSN, but they probably would continue using MSN. Wan-li explained: "I think Skype is pretty comparable to MSN in terms of video and audio quality. But I am just getting used to MSN, and most of my friends use MSN too, so probably I would not switch to Skype."

When asked what they specifically liked about this program, in addition to the high quality of video, the informants mentioned the feature that allowed for landline calls as well as PC to PC calls and the fact that they could receive text messages that are sent when the user is offline. They also liked the ability to put one audio chat partner on hold while answering another audio call. When asked what they disliked about this program, Skype was criticized for three things: the occasional poor quality of the sound; the small size of the video screen for one's own chat window; not being able to see the other parties in multi-user chat; and not being able to see their contacts when they change computers and therefore having to add all contacts again every time they use a different computer.

MSN was by far the best-liked program in terms of audio ($M = 4.44$) and video ($M = 4.39$) quality, although it was statistically equal to Skype overall. The participants indicated that they would strongly recommend this program for both personal and academic use, and they would definitely use it themselves. Most of them emphasized that they would recommend this program for a variety of usages, as Petek lists:

I would recommend this programme [to] my friends, fellow teachers and students. First of all, it is pretty useful for personal communication especially with the people you are far away from. Secondly, teachers can use it to provide support to their students outside the

Table 7
Overall ranking of CMC video chat tools.

Potential for		CUworld	ICQ	MSN	Paltalk	Skype	Yahoo
Personal use	Total points	91	75	21	98	34	59
	Average point	5.06	4.17	1.17	5.44	1.89	3.28
	Ranking	5	4	1	6	2	3
Language learning	Total points	86	75	27	93	32	65
	Average point	4.78	4.17	1.50	5.17	1.78	3.61
	Ranking	5	4	1	6	2	3

classroom. Thirdly, the students can have contacts from other countries and they can use audio conversation together with the video one to improve their English.

Although the informants were mostly positive about this program, and unanimously agreed that it had the best sound and video options, some had a few constructive criticisms. One thing that some informants criticized about MSN was the fact that it did not allow for video chatting with multiple users: As Bora states: "Though the audio and video quality is good with one to one interaction, there is no video audio and video support when there are more than two people. Therefore, it is appropriate for personal use but not very helpful for classroom interaction." Clearly, some informants doubted MSN as an appropriate video chat tool for communication among a group of people, especially language learners eager for cross-cultural exchanges with (native) speakers of their target language, because it does not allow for multi-user video chat.

One of the reasons why Skype and MSN were so popular with the participants may be that most of them were already familiar with these programs and were already utilizing them to communicate with friends and family. Both programs have high video and audio quality which is one of the most important aspects in online face-to-face communication. However, despite their high technical qualifications, the lack of multi-user video was seen as a potential negative for both, and the unavailability of multi-user voice chat on MSN was criticized.

After finishing the six evaluations on the *video chat tool evaluation sheets*, the participants also completed an *overall evaluation sheet* and ranked the six video chat tools in terms of the relative potential of each tool for its use in personal communication (e.g., for talking to friends) and for language learning (e.g., for their students to use in the classroom or at home). A #1 ranking referred to the most positively perceived program, while # 6 referred to the most negatively viewed one. The overall ranking of the informants (as seen in Table 7) agree with the quantitative ranking of the tools and the qualitative analyses of their written comments, with MSN ranking number 1, followed once again by Skype (#2), Yahoo (#3), ICQ (#4), CUworld (#5), and Paltalk (#6).

The results of this ranking confirm the findings of the statistical analyses: whether CMC is conducted for personal reasons or for language learning purposes, the ranking of the top three programs remain unchanged. Considering these results, it may be suggested that language teachers could use and recommend MSN and Skype for CMC in the classroom or at home. Rather than working with a variety of programs for different purposes, the language learner and teacher may choose one of these programs to be installed in the language lab, and the students may also install these on their home computers. Using the same programs at home and in the classroom would give a sense of security to the students. As they are already familiar with the program from class, they would have no difficulty or hesitation in engaging in CMC with other contacts at home using the same program. Therefore, the language teacher may expect a voluntary continuation of language learning and improvement out-of-class, which leads to better and more efficient learning of the target language.

3.3. Participant suggestions for pedagogical applications of video chat

As discussed earlier, one of the primary topics discussed during the communicative process of the video evaluation was how this technology could be applied to language learning. As part of the evaluation, the participants shared their ideas with each other, later documenting their ideas. A few of those ideas are shared in this section.

As might be expected, many of the evaluators, like Ipek, saw the greatest strength of video chat as its ability to give "learners a chance to chat with native speakers" and "to expose them to authentic language." In addition, if the chat is in the form of a class exchange, Samantha added that the use of video chat would also allow the partners to "show" things about their own cultures (e.g. show their campus via a wireless laptop connection) rather than just "telling" about it.

Laura extended on this native speaker input idea by focusing on how video chat would be useful in improving learner pronunciation:

I have a lot of students who cannot say /theta/ because they will not stick their tongue out or they cannot say /w/ because they do not move their lips or they cannot say /a/ or /ash/ because they do not open their mouth. Using video chat not only could the teacher/tutor see the students face, they could also show them their own mouth and how it should be shaped. Furthermore since most programs can show a smaller window of your picture along with your partner's picture-the student would become more aware of their own movements.

In the case of pronunciation, Laura also suggested it might be useful to have the students practice pronunciation with the audio off, forcing them to focus even more closely on the "visual information" in order to provide feedback. Berna and Sonith both added an additional focus, by emphasizing the ability of video to convey aspects of nonverbal communication since "our face and body completes the meaning that we want to convey" thereby enhancing "the power of communication" (Berna).

Ju-hyung suggested an application that is well suited to English for specific purposes, focusing on interview skills. He suggested that the students engage in "an imaginary job interview as most of the students [are] planning to get a job at an international corporation for 15–20 min with the teacher, who plays the role of the interviewer. This would take place via a program like MSN Messenger, with the interaction recorded via a screen recorder. This would create a record for the student of both their own performance and that of the interviewer (their instructor), and the students would then be required to evaluate their own interview skills.

Other students, such as Idil, focused on the ability of video chat to enhance the reading process. In her case, two groups of students engaged in a cross-cultural course exchange would read an article that focused on some aspect of the culture of one or both of the countries involved. After this, the teacher "[would] prepare a list of questions and discussion topics to be used during the video conference. Students can discuss the assigned reading in groups of 2 or 3 for 15–20 min through videoconferencing." In this case, the students might improve their "communication skills, both speaking and listening" while also focusing on the content of the readings.

4. Discussion

The analysis of the questionnaire responses and rankings indicated that, overall, MSN and Skype were the most trusted and preferred tools both academically and technically. The significant difference between the scores of these two programs and the other four

seems to signal that as language learning and teaching tools, MSN and Skype seem to be the most appropriate to language teaching professionals or teacher candidates, at least to the informants in this project who tested and evaluated the programs critically taking academic, personal, and technical issues into consideration. For example, having significantly higher scores on the audio and video components make MSN and Skype dependable and suitable tools for international and intercultural communication. When teachers have the opportunity to incorporate CMC into their language classrooms for the purposes of improving the speaking and listening skills of students or familiarizing them with the culture of an English-speaking country, they may have a better chance for clear and unproblematic audio and visual contact with other classes around the globe by using these two programs.

The researchers' observation of the video chat sessions in the two classrooms also confirmed the preference for MSN and Skype as "back-up" programs. When the language teachers evaluating these programs had trouble utilizing any of the other four programs during video chat sessions with their international partners, they relied on MSN or Skype as a fall back option to maintain communication and complete their tasks. This shows that programs with reliable audio-video technology are necessary for international and cross-cultural communication in language classes in order to avoid frustration, especially when time available for exchanges is limited due to time zone differences.

5. Conclusion and implications

This examination of the six video chat tools has shown that the two programs that fell under the "traditional" category (i.e. they had a focus on preexisting contacts and one-to-one video conversations), MSN Messenger and Skype, ranked at the top in terms of informant preference due to their practicality in technical aspects and usability for academic as well as personal purposes. On the lower half of the scale CUworld, and Paltalk had a stronger emphasis on community-oriented design that emphasized potential for communication with people not already known by the users. The programs in the middle, Yahoo and ICQ, shared some component of each of the other groups. While the lower rankings were sometimes easily justified by the informants due to the strict limitations placed on the amount of video that could be used in the free version (e.g., Paltalk) or because of frustrations due to technical difficulties, it was not always apparent why the community-oriented programs fared so low despite their design that provided non-native speakers who wish to practice their English with a wide array of potential partners.

It is important to note that these programs are constantly evolving. One example of this is that there is increasing cooperation to allow for chat across platforms—a feature that seemed unthinkable several years ago. For example, MSN and Yahoo users can now add contacts from the other program, allowing MSN users to chat with Yahoo contacts, and vice versa. Paltalk also has new service, Paltalk Scene, which allows video chat with friends from Yahoo, AOL, and ICQ. We would expect this trend to continue in the future, making the choice of a single program less important.

This study has a number of implications for language teachers and teacher trainers. Training teacher candidates to integrate CMC tools into the language classroom enables professionals to provide technologically up-to-date instruction and helps them keep their knowledge of and practice with new technology fresh. The language teacher who can utilize CMC tools effectively in the classroom can keep up with the technologically-inclined young generation of students who follow the new developments and innovations if they have the resources. When this technology is brought into the classrooms, the students would be using their daily knowledge and practice to improve their learning, which may increase motivation to learn and make learning easier and more fun. The study also has practical implications for the language learner. CMC tools help language learners enter authentic communication contexts in which they may converse with native speakers of the target language or share their language learning experiences with other non-native speakers. They use their theoretical knowledge of the language for real, communicative purposes during online exchanges.

While MSN and Skype were the favorite choices for our informants, it should also be noted that these programs may not necessarily always be the best for language learning. Both of these programs only allow for one-to-one video, and MSN for only one-to-one audio. In addition, because the informants were matched up by the researchers, they did not have the obligation of finding a partner to chat with. In this respect, the more community oriented programs offer greater potential for language learning in that students who wish to engage in independent language learning may be able to find a wider variety of chat partners there.

However, for those students wishing to avoid the R-rated factor, there is another option that makes use of MSN and/or Skype in a more "controlled" manner. A number of language exchange sites such as xLingo (<<http://www.xlingo.com>>) and My Language Exchange (<<http://www.mylanguageexchange.com>>) offer the free service of matching learners with partners interested in learning a language. In these, and in an increasing number of similar sites, learners identify the language(s) they speak and the language(s) they wish to learn or practice, and are matched up with a partner who wishes to learn that primary language. These sites make use of some of the existing audio and/or video chat technologies reviewed in this study (xlingo utilizes Skype, while mylanguageexchange recommends using either Skype or Paltalk). This allows them to avoid chat areas in programs like Paltalk where the topics of discussion largely do not focus on language learning. Instead they are connected with users whose primary goal is language practice. In addition, if a participant engages in "disruptive" behavior they may be reported to the managers of the site. This may be the ideal situation for individual language learners and could also serve as a site for entire classes to find practice partners.

Finally, for the classroom, one issue for teachers is how to monitor whether or not students are actually "exchanging." There are several ways that this may be done. First, students may keep a log/journal of their discussions. Teachers might give their students topics to discuss with their partners, paying attention not to "kill" the incentive to talk. They may also encourage the students to meet in larger groups. While larger video conversations are not possible with some of these tools, they may have occasional audio and/or text chats. Knowing that other people will be involved will help to keep all the participants active. Finally, it is important to bring these conversations into the classroom. Learners may give information about their chat partners in class (an early assignment should be some sort of biography) and discuss what they are learning and what they are teaching their partners. The sites mentioned above are language exchange sites. Teaching about their own language will also make the participants more effective learners.

Appendix A: Video chat tool evaluation sheet

Your name: _____

Partner(s) who evaluated this program with you: _____

Name of tool being evaluated (e.g. Skype): _____

Type of Internet Connection (circle or bold & underline one)	Connection Speed
Dial-up	go to http://www.numion.com/YourSpeed3/ and click on "quickstart" for this test.
DSL	Download speed=
Cable	Upload speed=

My partner(s) and I were able to connect with this program. Yes No
 We were able to have video conversations between this many participants:
 2 3 4 5 other _____

Please rate the following items on a scale from *Excellent* to *Poor* using the following phrase to begin each item: **During our conversation, the...** (Please note—if you were able to have a video connection with more than one partner, please indicate the quality for the 1-1 connection and the larger (e.g., 3-3 or 4-4) connection. This means that you might, for example, have an excellent 1-1 connection, but a poor 4-4 connection. See the sample below)

	Excellent	Good	Neutral	So-so	Poor	Not applicable since we had no connection at all
quality of audio connection—sample	1-1				4-4	
1. quality of audio connection was...						
2. quality of video connection was...						

Please rate the following items on a scale from *Strongly Agree* to *Strongly Disagree*.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3. I would recommend this program to my friends (for informal personal communication)					
4. I would recommend this program to my fellow teachers (for academic use)					
5. I would recommend this program to my students (in my home country) who wish to improve their English					

Please rate the following items on a scale from *Definitely* to *Definitely Not*.

	Definitely	Probably	Maybe	Probably Not	Definitely Not
6. I will use this program for myself					
7. I will use this program for teaching					

8. If you had strong reactions to any of the statements above (either positive or negative), please write a note or two explaining why. Please start each comment with the number of the item you are talking about.

Please rate the following items on a scale from *Strongly Agree* to *Strongly Disagree* using the following phrase to begin each item: **I found the program...**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Applicable
9. website user friendly						
10. easy to install						
11. easy to setup						
12. easy to use						
13. provided good help/support						
14. made it easy to add members						
15. made it easy to start a conversation						
16. made it easy to see if others were online						
17. has strong potential for personal communication						
18. has strong potential for classroom communication						
19. frustrating to use						
20. confusing to use						

If you had strong reactions to any of the statements above (either positive or negative), please write a note or two explaining why. Please start each comment with the number of the item you are talking about.

- 21. What else, if anything, did you like about this program?
- 22. What else, if anything, did you dislike about this program?

Appendix B: Video chat tool overall evaluation sheet

Now that you've examined six tools for using video for CMC, what do you think of the overall usefulness of this technology for personal communication?

	Very useful	somewhat useful	Neutral	somewhat useless	very useless
1.					

Now that you've examined six tools for using video for CMC, what do you think of the overall usefulness of this technology for language learning?

	Very useful	somewhat useful	Neutral	somewhat useless	very useless
2.					

3. Please rank these tools from favorite (1) to least favorite (6) for your personal use:

- ___ CUworld
- ___ ICQ
- ___ MSN Messenger
- ___ Paltalk
- ___ Skype
- ___ Yahoo Messenger

4. Please rank these tools from best (1) to worst (6) in terms of their potential use in teaching:

- ___ CUworld
- ___ ICQ
- ___ MSN Messenger
- ___ Paltalk
- ___ Skype
- ___ Yahoo Messenger

Please tell us a little bit about your reasoning for your numbers 1 and 6 rankings. In other words, what makes your number 1 ranking the best for teaching and what makes number 6 the worst? Feel free to also discuss your 2-5 rankings if you have something to say about them.

What other comments do you have?

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