Handbook of Research on Virtual Workplaces and the New Nature of Business Practices

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Chapter XXXII
Instant Messaging (IM) Literacy in the Workplace

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ABSTRACT

This chapter discusses instant messaging (IM) as a valuable digital tool that has influenced business communication practices at least as much as e-mail. It argues that IM's characteristics of presence awareness, synchronicity, hybridity, and interactivity create a unique set of writing and reading experiences. These functional qualities both require and hone high-level writing and reading skills, which are used powerfully in communicative multitasking. The authors believe that IM should be sanctioned in the workplace and that IM use should be a subject of focused training; to that end, they provide a practical, literacy-based training sequence that can be adapted to various settings.

INTRODUCTION

Instant messaging (IM) is a primarily one-to-one text-based communication platform that also enables group interactions; it is highly popular among many Internet users and is ubiquitous among young adults. Currently businesses are hiring members of the "IM generation" as their newest, most computer-savvy employees, who are transferring their social IM skills to business settings. Flynn and Kahn (2003) projected that as many as 530 million people would use IM by the year 2006 (p. 187); many of these would be teenagers (Pew Internet and American Life Project,

2005). Although not included in these statistics, IM also can be accessed via some cell phones and personal digital assistants—increasing its use, popularity, and impact.

Not surprisingly, then, many businesses use IM through both enterprise-level and Internet-based IM clients. The International Data Corporation estimated there would be 229 million corporate IM users by 2005 (Miller, 2001, p. 208), and much IM use is practical and work-based. In their research, Isaacs, Walendowski, Whitaker, Schiano, and Kamm (2002, pp. 17-18) found that the primary use (62%) of IM in the workplace was for conversations about work, which included work talk,

doing work, and work-related talk, while simpler tasks of scheduling and coordination (31%) were a secondary use (see also Handel & Herbsleb, 2002). Alarmingly, however, some businesses actively ban IM use in the office, ignoring or not understanding its benefits in terms of connecting employees. In particular, employees benefit from IM in settings where workers are dispersed geographically, within a building, or across a corporate structure. In both traditional and virtual workplaces, IM is versatile and interpersonally interactive, supplementing the telephone and e-mail and providing inexpensive, accessible communication.

These predictive statistics for IM usage are staggering, and they suggest how powerfully a digital tool like IM can change communication practices in the workplace. In fact, IM has enabled remarkably complex communication skills that belie its seemingly simple technology and uses. Baguley (2002) claimed that: "IM will not fundamentally change the way we work like e-mail did." We disagree. IM has already produced fundamental changes to the workplace, comparable to e-mail, by virtue of the literacy skills and communicative multitasking capabilities of each person who uses it. Such capabilities, which we will define and describe in this chapter, represent skills that employers can leverage for contemporary workplace practices. We argue that employers not only should sanction and provide IM connections, but also should train employees to use IM more effectively for their workplace settings. Thus, we also present practical training material for engaging IM's communicative functionalities and conveying the business's communication priorities to its employees.

BACKGROUND

Historically, IM has existed in one form or another for over 30 years, which has implications for the number of users who have developed the unique IM literacy skill sets described in this chapter. IM has its natural home in the workplace as it initially was developed in a work setting to meet early computer programmers' needs for one-to-one communication. Indeed, one primitive form of IM called *write* existed on large mainframe UNIX computers as far back as 1975. The protocol enabled computer operators to inform each other of operations that might affect the entire mainframe, but most likely they also used it for social chat.[1]

Most contemporary IM clients also provide a variety of new media affordances like voice and visual communication, personal calendars, Weblog interfaces, and such Web services as newsfeeds, weather, and current events—any of which may be valuable for workplace settings. However, in this chapter we focus primarily on text-based, default one-to-one, and selective one-to-group "chat." Text-based chat is IM's most basic, oldest, and most commonly used feature for interactive communication from which all its other features derive or diverge. IM users are connected through a common server via client software, and they "find" each other through their registration or user-supplied nicknames. Any IM software produces text boxes through which participants "talk" to one another. Upon logging into the IM client through an intranet or Internet connection, an IM user can see others who are logged-on and part of their acquaintance or "buddy" network.

An IM platform is like a telephone in that it enables one-to-one synchronous conversation;[2] yet it also is like e-mail in that it can be answered at one's convenience. Like a telephone call, IM requires two people who are simultaneously connected to engage an initiated interaction. If the recipient of the IM message is online and logged onto the IM client, but temporarily away from the computer or busy with other tasks, the "call" is on hold. The initiating text message—now asynchronous as it awaits the recipient—becomes like telephone voice mail, where the caller's message signals an attempt at contact (see also Huang and Yen, 2003, p. 66). Like e-mail, however, the message can be returned immediately upon contact or later when it is more convenient. IM technology provides a

connection similar to the telephone in its capacity for interactive conversation between and among speakers. More like e-mail in its textual form, however, IM employs text for message creation, which offers it "persistency" and archival quality (Leuf, 2002, p. 143). Because an IM is delivered to the recipient's computer immediately, there is a negligible time lag between message sending and reception, making it a synchronous tool, whereas e-mail is asynchronous. The rest of this section briefly defines IM's key functionality through a discussion of presence awareness, synchronicity, hybridity, and interactivity.

Presence Awareness and Synchronicity

IM chat can be "socially less demanding than a real-time conversation" (Leuf, 2002, p. 143; see also Huang & Yen, 2003; Wood, 2000), a characteristic partially due to presence awareness. Presence awareness, one key to IM's popularity as a business tool, is a feature that exists in both physical and virtual spaces. IM chat can occur physically in collocated spaces, where participants are visible to each other in the same room, such as an office suite. In such cases, IM users both can *visually* see each other for physical and verbal contact and can *virtually* "see" each other through their IM service, enabling private online conversation outside of their surroundings and public interactions. Virtual presence awareness also transcends distributed space (e.g., through a local area network of a business server) and distance space (e.g., across state and national borders).

Beyond accessibility, however, presence awareness offers other, more crucial advantages by way of social interaction and human connectedness (Huang & Yen, 2003, p. 65; see also Agnew, 2000). According to Hard af Segerstad and Ljungstrand (2002), "[a]wareness of presence increases the more synchronous the communication" becomes (p. 155). In other words, presence awareness is not only a technical feature of IM, but it also reflects a genuine sense of one's physi-

cal or virtual presence—the immediacy of one person's awareness of another using computer-mediated communication (CMC). For example, some people may find e-mail, which can be like the modern phenomenon of "telephone tag," unsatisfying because of the time-lag associated with asynchronous communication. One person sends a message and the recipient eventually responds—or does not respond. Asynchronous writing activities, thus, are "monomodal" (Hard af Segerstad & Ljungstrand, 2002, p. 154).

With a more synchronous exchange like oral speech in a face-to-face or telephone communication, people can speak and control the message simultaneously. With such synchronicity, they can exchange and overlap ideas or words in a rapid-fire manner. Oral speech, therefore, is a "multi-modal" activity (Hard af Segerstad & Ljungstrand, 2002, p. 155), produced in a relatively effortless manner as compared to writing. Speakers remain aware of each other both as recipients and creators of the message. Unlike asynchronous communication where the written words are likely to become the focus through a rhetorical drafting process, synchronous communication like oral speech and IM chat push the focus toward the real-time interaction of the interlocutors and the messages they are conveying. Using IM, people communicate in quick, natural exchanges—much like oral speech. When they engage in IM, people become speakers and listeners, as in an oral conversation, but they also are readers and writers who depend on context and who negotiate meaning.

Hybridity

Whether asynchronous or synchronous, CMC is commonly understood to use a "hybrid" form of oral speech and written language (Faigley, 1992; Hult & Richins, 2006). Computer-mediated talk, of which IM chat is but one form, is neither the opposite of spoken talk nor simply a typed version of spoken talk. Any computer-mediated talk has elements of both spoken and written language. It is like oral language in that instead of being

monologic, as writing traditionally has been, it attempts to connect dialogically with other participants and to engage them in the open-endedness of oral talk. However, computer-mediated talk has tendencies toward being closed and finite, characteristic of written language. It also is like oral language in that it is context-dependent. Interlocutors cannot understand one another *as* interlocutors without knowing the background and conditions of the conversation.

IM's hybrid nature, when combined with presence awareness and synchronicity means that people who communicate via IM can write much like they would speak in person or on the telephone—in short, spontaneous utterances, with quickly shifting points of focus, and without regard to surface correctness or perfection. Misunderstandings that occur because of this hybridity are similarly correctable, allowing participants to check out their understanding or impressions almost immediately. Indeed, small textboxes and character limits in some IM clients encourage a communicative habit of chatting in short phrases and brief or fragmented messages; such characteristics are further encouraged by small cell phone text message spaces. Indeed, these messages may actually deepen chat's hybridity by compressing talk into IM-ular slang.

Interactivity

Register theory (Halliday & Hasan, 1976) can illuminate the interrelationship, or interactivity, of speakers engaged in IM conversations because register provides useful language for discussing the social aspects and situational variables inherent in any discourse. Register variables consist of *field* (what the language is being used to talk about), *mode* (the role the language plays in the interaction), and *tenor* (the role relationships between the interactants). Here we use the concept of *mode* and a continuum based on the work of Eggins (1994) to examine the distances between spoken and written situations of language use, and for placing IM within a continuum of interactivity.

In a workplace setting, for example, distance is both spatial and interpersonal, which enables judging the possibilities for "immediate feedback between the interactants" (Eggins, 1994, p. 53). Eggins explains this distance through an interpersonal continuum ranging between casual conversations (whereby speakers communicate orally) and writing a novel (whereby the writer/speaker's listener/reader cannot respond interactively to the novelist) (1994, p. 53). The continuum represented in Figure 1 shows the most interpersonal interaction on the left and the least interpersonal on the right; not coincidentally, the interactions on the left side also are the most synchronous in nature. We have placed IM between the telephone and e-mail given the level of interactivity it affords. Notice that *e-mail* and *IM* represent asynchronous and synchronous digital communication respectively; both are located mid-continuum because they are similar in their hybrid, interpersonal natures.

As becomes evident in this model, human interactivity emerges from the potential for feedback or response, and it is intimately connected to interpersonal distance among speakers. The degree to which the speaker can offer feedback suggests the degree of interactivity. IM is slightly more interactive than e-mail, and it clearly is far more interpersonally interactive than the solitary experience of, for example, reading any text such as a novel or a Web page.

Figure 1. IM-inclusive communication interactivity continuum

Casual Conversation ↔ Telephone ↔ IM ↔ E-mail ↔ Fax ↔ Radio ↔ Text
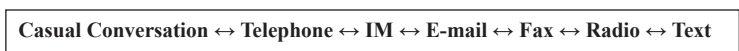
MAIN FOCUS OF THE CHAPTER: IM LITERACY AND THE WORKPLACE

Literacy Skill Sets

Traditional literacy in terms of reading and writing has taken new forms in the digital world—leading to new literacy skill sets. There are adjustments that readers and writers make when they move from a traditional print (linear) reading style to a digital hypertextual or threaded (associative) chat (Bolter, 2001; Bolter & Gruisin, 1999). As a hybrid, IM has led to new syntactic habits regarding word and phrase abbreviations, and participants may need some contextual knowledge, however slight, of IM dialects for both reading and writing IM. It is this feature of IM about which some corporate managers and educators worry; some express fear that the abbreviated and speedy language of IM will "change young people so much" that they will lose their ability "to think in proper grammatical sentences" (Carpenter, 2006; Guernsey, 2003, p.E1; Worley, 2003). Others, however, suggest that given a background in appropriate genres, such as those of business communication practices, IM communicators are fully capable of strong writing.[3]

Indeed, just as Graham (2006) argues for global collaboration and citizenship among distance-based businesses, we argue that IM-ular language contributes to a need for shared language and "universal literacy" (Worley, 2003). Our observations of IM and its users suggest that widespread IM communication—a sort of universal connectivity—fosters a universal literacy of IM communication through user-developed skills in associative, recursive writing and reading. As opposed to a pessimistic view that literacy skills decline with IM chat, we think that IM both requires and develops more sophisticated—if less standardized—writing *and* reading skills. Businesses can take advantage of these literacy skills to improve communication among its employees and clients.

Writing IM Messages

Traditional literacy requires skillful writing, yet people might not see a similar skill set as necessary for IM chat. Because IM chat tends to retain the structure of spoken language—quick, short, spurts of talk with abbreviated language and slang—it encourages interactivity and open-endedness, and it brings to written communication a more dynamic and interactive quality. Thus, IM chat reveals certain language choices that stem directly from its synchronous, hybrid, interactive nature: informal, spontaneous expression; non-standard grammar, punctuation, and spelling; fragmentary statements (e.g., neither "complete" sentences nor lengthy paragraphs); and shorthand language choices that include abbreviations and phatic utterances. The text also reveals mistypes and self-repairs, which indicate the speakers' rapid speech and a focus on the message over the text itself. These qualities comprise an atmosphere of give-and-take and circumlocution similar to that of oral speech (Ong, 1982). Yet, these same qualities concern those who critique IM, fearing that such a writing style necessarily interferes with writing in standard situations, such as a formal business memo or e-mail. Figure 2 demonstrates these qualities as an example IM exchange between coworkers Jamal and Christina.

This short, but contextually rich, message occurs over nearly 10 minutes, and it demonstrates a wide range of writing skills. Jamal and Christina were multitasking during their conversation, which accounts for some of the time lag between messages. In particular, Jamal was involved in an apparently more formal IM conversation with Daryl, the team leader, while he was chatting less formally with Christina. When conversing online, spontaneity often reveals itself in everyday language like speech, making the conversation "sound" like street talk. Phrases like "got a sec?" and "what's up?" are greetings one might hear in passing through an office. Nonstandard grammar, spelling, and punctuation are also hallmarks of IM chat that often are attributable to rapid typ-

Figure 2. IM chat

[1] **Jamal (1:57:50 PM):** hey, got a sec?

[2] **Christina (1:58:01 PM):** sure; what's up?

[3] **Jamal (1:58:32 PM):** I've got Daryl on IM. She's concerned about whether the team can get the McMurtry order done on time. How r the numbers going?

[4] **Christina (1:58:48 PM):** …I'm catchin up; Jack didn't get the data to me until yesterday after 5

[5] **Jamal (1:58:59 PM):** did he let you know he would be late?

[6] **Christina (1:59:14 PM):** he didn't call until 20 min late and I had other calls to take, so I didn't get the message and all the info til this morning

[7] **Jamal (1:59:47 PM):** did you set up something else while you were waiting? Daryl wants to know how the drawings are going on the rest of the project…

[8] **Christina (2:00:05 PM):** didn't waste time while I was waiting, got the call lists finished. But I did feel like I was just filling in time…

[9] **Christina (2:00:18 PM):** I don't have a good read on the drawings. Only saw one from Ed; looked like a really rough draft.

[10] **Christina (2:00:37 PM):** Would you ask Daryl if we'll be able to adjust the due date if needed?

[11] **Jamal (2:00:50 PM):** k; sounds to me like the team needs a push –

[12] **Jamal (2:00:57 PM):** sec brb

[13] **Jamal (2:04:35 PM):** so, just told Daryl that we're doing ok on the Smithson project but this one has us a little batty. She seems concerned

[14] **Christina (2:04:40 PM):** hmmm

[15] **Jamal (2:04:56 PM):** Here's what she wants. We'll have a conference call as a team today at 4:00 – she'll have the agenda in the e-mail soon.

[16] **Christina (2:05:32 PM):** think we could get our ducks in line with a quick group chat w/o Daryl just to figure out where we all are before getting on phone?

[17] **Jamal (2:05:45 PM):** sounds good; I'll invite you, Jack, and Ed to the chat. btw thanks

[18] **Christina (2:05:58 PM):** huh? For what?

[19] **Jamal (2:06:03 PM):** for the assist here

[20] **Christina (2:06:19 PM):** Oh, I got it, okay... welcome. ☺

[21] **Christina (2:06:34 PM):** bye then; I need to finish this reporte. I'll look for your invite.

[22] **Jamal (2:06:39 PM):** k; bye

ing. However, the combination of standard ("I don't have a good read on the drawings") with nonstandard ("Only saw one from Ed") written English in many IM chats suggests that the speakers are purposefully choosing the language in their conversations and that they have control of standard usage when they want to use it, which is a sign of linguistic competence.

Similarly, meaning would be clear to most literate writers despite inaccuracies of capitalization, punctuation, and spelling. When nonstandard and standard words are combined in a chat, as in this example, they demonstrate each speaker's proficiency, as well as indicate some type of regularity or pattern to the nonstandard forms (Shaughnessy, 1977). Certain regularities of punctuation, such as the dash (–) or use of ellipses (…), also provide relatively clear indicators of continuing thought even where the sentence is fragmentary. Besides regularizing and signaling the beginning or end of a thought, such punctuation helps to manage the almost inevitable interruptions and overlaps that can occur with IM talk. These nonstandard language uses lend the written chat an air of spontaneity and speed.

IM chat does not simply mimic talk through typographical symbols; rather, it *facilitates* such talk through specialized shorthand language. IM shorthand can be as common as "sec" for "second," "min" for "minute," or "bye" for "goodbye," which are typical to contemporary written and spoken English. On the other hand, some shorthand, such as "brb" for "be right back" and "btw" for "by the way," reflect a specialized discourse particular to IM chat. Sometimes cited as corrupted English (Brown-Owens 2003; Eason, & Lader, 2003; Worley, 2003), these abbreviations stem partially from small text boxes provided for writing a message; however, they also are related to IM's inherent loss of visual and aural cues, helping to keep the chat on track and making it a recognizable conversation.

When people communicate orally, nonverbal gestures and signals (e.g., moving eye contact from one speaker to the next, clearing the throat and other nonverbal noises, head nods, and smiles

or frowns) combine with orality to signify intention, action, qualification, and phatic connection. In IM chat, "brb" acts as a qualifier, signaling action and the writer's intention to return to the conversation; similarly, "btw" and "afaik" ("as far as I know") also are qualifiers. Other shorthand language signals ownership of action and emotion, such as "ooops" and "<blush>" to acknowledge a mistake or embarrassment, and emoticons like smileys "☺." Finally, phatic-like language such as "hmmm," "uh huh," "thinking," and "k" (for "okay") provide backchannel cues that help speakers to convey that, despite a break in typing, they are still present and participating.

Clearly, IM-ular writing is not simplistic or corrupted, as some suggest. Instead, IM seems to have developed its own dialect comprised both of systematic and irregular "rules" or customs. To communicate fluidly with other IM users, people both adapt their writing to these customs and develop new ones as needed, which are abilities that mark able writers rather than illiterate ones. In the workplace, these abilities can help to get the job done by opening communication with writers of varying skill levels, to include nonnative speakers of English in both national and international settings.

Reading IM Messages

Reading IM chat is a similarly complex affair that develops sophisticated, if specialized, literacy skills useful to readers and writers of any online text. Slatin (1991) suggested that successful hypertextual reading requires an intuited sense of its nonlinear and associative process, which is much like the thinking process. Because IM speakers can talk interactively and synchronously, the likelihood of overlapping talk is high, creating a challenging environment for reading comprehension while simultaneously forming a response and/or beginning a new thread of ideas. The ability to contextualize information is important to making sense of threaded chat. Just as talking through IM requires conscious steps in the

writing (talking) process, it also tasks literacy in the reading (listening) process. Participants must read individual comments and choose whether and how to respond to them.

Because IM chat may be used to negotiate sophisticated, complex collaborations, multiple topic threads can occur in any one conversation, where either participant might lag behind the other's chosen or "hot" topic (Faigley, 1992, pp. 180-181). The threaded nature of such synchronous chat itself requires speakers to associatively read, respond, search out pertinent messages, read, and respond again recursively—often rapidly (Hewett, 2000, p. 270). The process of unthreading messages requires conscious steps different from oral communication, and in synchronous communication like IM, such unthreading must occur somewhat rapidly. Indeed, unthreading IM chat seems substantively different from reading any asynchronously written message, even a complex e-mail, for example.

In Figure 2, one can see this recursive reading process occur as speakers Jamal and Christina greet each other, discuss the McMurtry project, reconcile their team leader Daryl's questions with their own and coworker Jack's progress, make an action plan for a group chat prior to a required conference call, and close the chat. While the chat begins in the turn-taking manner common to asynchronous communication, it quickly spins into multiple threads of talk. Thus, for example, in line 7 Jamal asks what Christina was doing while waiting for Jack's part of the project and immediately thereafter conveys Daryl's question about the project drawings. Christina uses two separate lines to answer these questions. Then, at the same time as he acknowledges Christina's question for Daryl about deadlines, Jamal offers his own opinion that "the team needs a push." There is a 4 minute time lag while Jamal concludes his talk with Daryl and then he returns to his chat with Christina; presumably, she addressed other tasks while waiting for his response.

Undoubtedly, like writing IM chat, reading it taxes literacy skills through the need for constant

contextual thinking; in effect, reading IM chat creates a fluency of associative skills similar to those of speech that many other writing situations do not require. Good IM chat requires attentiveness, memory, follow-through, and recognition of turn-taking that is quite different from e-mail correspondence. As we discuss below, the literacy skill set connected to avid IM usage already has affected contemporary workplace communication beyond the concerns of syntax and grammar that we have already discussed. Given that the IM generation is fluent in multiple digital literacies, readers should wonder to what degree reading IM influences literacy skills necessary for other digital communication forums used in the workplace.

Communicative Multitasking

Many IM speakers conduct multiple conversations at one time, a phenomenon that we call "communicative multitasking," which requires participants to keep various channels of communication and topic threads straight and to keep the different chats going in a sensible manner (see also Abel, 2003; Cohn, 2002; Yuan, 2003). Communicative multitasking is the process of having more than one communicative exchange with one or more interlocutors at the same time. It is analogous to multitasking in a generic sense. For example, one who simultaneously eats lunch, prints a document, and IMs a coworker is multitasking, which certainly can use time profitably (Hult & Richens, 2006; Isaacs et al., 2002).

However, communicative multitasking, which is at once a complex communicative activity and an adaptive social act, involves participation in more than one communicative action at a time and is an important dimension made possible by synchronous CMC like IM. In the common terminology of communications and rhetoric studies, an exchange would be a single topic or thread, and the link between the two communicators would be a channel. For example, as Figure 3 reveals, in a single channel, single thread interaction, the exchange (A) is a single topic or *thread*, and the

link (1-2) between the two communicators is a *channel*. This interaction does not represent communicative multitasking because only one thread of talk is occurring over one channel: Jake talks only to Drew about one issue at a time.

Rather, communicative multitasking can be understood in three forms: (1) single channel, multithread, (2) simple multichannel, and (3) complex multichannel.[4] When users communicatively multitask, their literacy skills are flexed and strengthened contextually and responsively.

The first form of communicative multitasking is shown here in Figure 5, where A and B are the interwoven topics threads over the channel (1-2). When two people write to each other about two or more interwoven topics during the course of one IM chat, their talk is a single channel communication because it is only between them. Their subject matter is multithreaded because they are talking about more than one issue simultaneously. A single channel, multithread IM communication occurs when, for example, Tom and Paul write to each other about two or more interwoven topics during the course of one IM chat. Tom might write about a new project at the same time that Paul writes about a conference during which they will copresent an older project. While Tom responds to Paul's message, Paul is responding to Tom's message. They continue in this manner for several posts, discussing both topics simultaneously.

The second form of communicative multitasking is shown here in Figure 4 (and exempli-
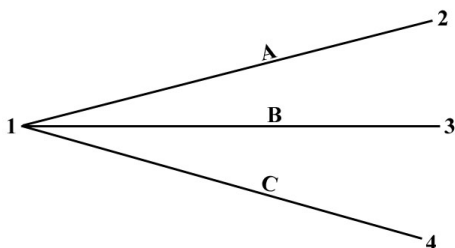
Figure 3. Single channel single, thread interaction

1 ——————————————— A ——————————————— 2

Figure 4. Single channel, multithread interaction
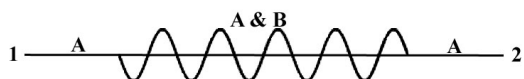
Figure 5. Simple multichannel interaction

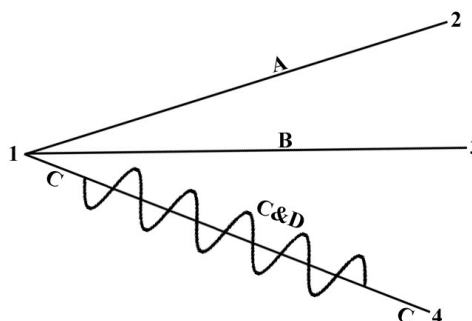*Figure 6. Complex multichannel interaction*

fied in Figure 2) where A, B, and C represent different conversation threads with different people over different channels, 1-2, 1-3, and 1-4 respectively.

Jamal's conversation with Christina and Daryl represents a simple multichannel chat because he is IMing to both Christina, whose chat we can see, and to Daryl, whose chat we cannot see. It is simple because in each channel only one topic is being discussed at one time. The interlocutors are working over multiple—two—channels, as Jamal talks both with Christina and with Daryl. If Jamal was using the telephone instead of IM to talk with Daryl, it still would be a simple multichannel communication with the telephone as the second channel; if Jamal had yet another IM chat going, the additional channel would increase the communication's complexity. For example, an IM user in a work setting might use IM chat to discuss with her colleague the due date for a joint project, help a junior employee troubleshoot a problem, and keep her supervisor informed about the problem, both explaining the situation and receiving guidance; at the same time, she might keep an IM window open to joke with another coworker with whom she shares a more social relationship. Undoubtedly, while it takes skillful communication skills to keep even two chats going sensibly, some IM communicators have more than five chats open at once.

Such intricacy is increased in complex multichannel communicative multitasking, the third type relevant to IM, as Figure 6 shows.

A complex multichannel interaction is much like the second form (Figure 5) except that at

least one of the channels follows the pattern of the simultaneous multithread found in the first form (Figure 4). Thus, in a complex two-channel interaction, one channel might be used for a normal, single threaded chat while the other would be used for a simultaneous, multithreaded chat. Arguably, this kind of interaction might be less common than the other two forms, yet the reality of even one channel following the pattern of the first form in a multichannel series of communications adds to the challenge of communicating in general and of reading and writing the IM messages in specific.

A good deal of communication certainly takes place in these scenarios. Multiple types of interaction occur, a broad spectrum of work gets done, and one becomes somewhat skilled in juggling a number of communicative tasks simultaneously. However, particularly in multichannel IM communications where different chats occur quickly and concurrently, we acknowledge that one's focus also shifts among the various communications—sometimes, we suspect, for the worse in terms of precision, politeness, appropriateness, or attentiveness to the interlocutor and/or message. The very synchronicity of IM may make it harder to ignore than e-mail, for example (Herbsleb, Atkins, Boyer, Handel, & Finholt, 2002, p. 171).[5] Highly interactive IM users might become cognitively stressed, possibly showing some mental fatigue during the day. Imagine the embarrassment of responding to one person's message in another recipient's textbox—especially

when one speaker is a peer and the other a supervisor. Yet, also likely, an individual chat that occurs concurrently among several chats might quickly and easily resolve a question or concern while not interfering significantly with one's attention to the other chats (see, for example, Isaacs et. al., 2002, p. 12).

The relative importance of IM chat-based communicative multitasking should not be underestimated. Because of sheer volume, communicative multitasking is likely to be or to become dynamic in work settings where IM is sanctioned. Depending on the setting, users may be linked only at the enterprise level or nationally and internationally by widely available IM protocols. These links to other users can vastly increase the company's reach in terms of distance-based employees and contact with clients. As the usage statistics at the beginning of this chapter suggest, there are millions of people connected via IM protocols—any of whom can become essential to one's business.

The importance of IM-based communicative multitasking, therefore, is that in the increasing numbers of IM communicators, the incidence of multitasking is increasing exponentially and its consequences—positive or negative—also are on the rise. The literacy skill sets that make communicative multitasking possible are introduced to computer users at a relatively young age, honed through adolescence and young adulthood, and brought to workplace settings where the users can adapt social and school practices to meet the needs of their daily work. Undoubtedly, then, IM users have brought to the workplace fundamental literacy and communication changes—comparable to the business practice changes resulting from e-mail—leading to potentially increased productivity.

An IM Training Sequence

In empirical research conducted at AT&T Labs, Isaacs (2003) analyzed over 21,000 IM conversations among 437 workplace users. Her research indicated that business-based IM use focuses on "working collaboratively to address complex, work-specific problems" (see also Isaacs et al., 2002). Contrary to common anecdotal studies, she found that most workplace IM use is primarily for "complex, work-specific interactions" and that such users tend to complete their conversations via IM rather than moving to another medium from IM. In the workplace, the implication is that workers can be efficient, creative, and productive when they have IM on their computers, which suggests that employers would be well served to harness IM technology and to develop IM policies that engage both workers' and the technology's strengths. In light of the complexity of literacy and communicative multitasking skills inherent to IM use, as well as IM's popularity among young adult workers, we argue that business settings can benefit from sanctioning its uses for inter- and intra-office communications. However, there are potential challenges that accompany such an action. Encouraging IM usage does not come without its difficulties. Thus, we offer the following suggested training materials that employers can sequence and adapt to their own work settings.

In these materials, we have been influenced particularly by Cargile Cook's (2002) concept of "layered literacies" as a framework for technical communication instruction: "Today, technical communicators need to be multiliterate, possessing a variety of literacies that encompass the multiple ways people use language in producing information, solving problems, and critiquing practice" (pp. 5-6). Assuming that "workplace writers need a repertoire of complex and interrelated skills to be successful" (Cargile Cook, 2002, p. 7), Cargile Cook developed a framework of six inter-related literacies for a college-level technical communication curriculum: basic (writing and reading), rhetorical (focusing argument to audience, purpose, occasion), social (working and communicating with others), technological (using technologies for social, collaborative, and business interactions), ethical (understanding decision making, personal responsibility, and workplace ethics), and critical

(understanding power structures, ideologies, and stakeholders' needs).

This chapter has already addressed the basic literacies of writing and reading IM; to these, we add the other framework elements. Our purpose is to enable technical communicators "both to promote and assess the increasingly complex range of knowledge and skills" necessary for using IM successfully in business communication (24). Cargile Cook's (2002) layered literacies provide a heuristic for determining other workplace goals for IM training. Table 1, developed from these layered literacies, advances some outcomes for training in IM usage, which can be sequenced according to a particular workplace's training needs.

What implications arise as IM moves into business environments? Such implications both *will affect IM users*, who are in the workforce, and *will be affected by these users*. In this next section, we describe five training scenarios that can be used in training. Discussion can be framed using the layered literacies and/or in terms that most concern a particular corporate setting. One useful way to conduct this training, particularly for distance-based employees, is through a form of group IM chat. The act of responding about IM chat using chat enables a metacognitive and reflective experience about IM that will prove helpful on various cognitive and practical levels.

Training Scenario 1: Presence Awareness

When employees can connect remotely to each other for collaborative activities, administrators can use IM to note and monitor employee presence. Presence awareness provides supervisors with a way of virtually seeing employee activity. Since some IM clients offer information such as how long the user has been online or whether a user's keyboard has been idle, the technology may assist employers in judging effective or, at least, attentive work practices—particularly in distance work arrangements. How might such monitoring affect users who know how to employ IM for social

settings, but who otherwise might be unfamiliar with workplace restrictions and accountability? If IM is used both for communication and accountability in the workplace, could the latter lead to misuse and should workers be notified as to such aims for the technology (see also Selber, 2004, p. 85)? In a workplace setting, has the employer purchased the employee's time and gained the right to monitor it electronically? What practical and legal regulation policies should be developed to address IM chat as it might be used for social, as well as business, activities (Flynn & Kahn, 2003, pp. 189-191)?

Training Scenario 2: Transferring social skills to business settings

Young or inexperienced workers who are skillful social users of IM need to transfer such social skills to professional settings. The hybrid nature of IM chat may enable or support some potentially confusing practices when social and workplace uses blend. Conventional IM practice, for example, allows people simply to ignore a message until a convenient time arises, which typically would not offend the sender. In professional settings, where expedient communication is one of IM's benefits, there may be a general understanding that one participant is busy or temporarily away from the computer whether or not a formal "away" message has been posted (Leuf, 2002). Users know that the message has been received because connectivity requires an online presence. However, when one finally does respond, how can one construct a contextually and rhetorically appropriate message to the audience and relationship? What are the rhetorical, social, and ethical consequences of, for example, ignoring a supervisor or failing to post an away message?

Additionally, although IM chat invites shortcuts and abbreviated language, it also conveys tone, which requires thoughtful and knowledgeable communication habits. How does one develop an understanding of formality levels in IM settings? Is that understanding different in IM

Table 1. Layered literacies for IM in workplace settings

Basic Literacy	Learn how to write and read IM so that users of all skill levels can understand the communication.
	Assist coworkers and supervisees with appropriate, literate IM use.
	Adopt consistent IM talk strategies relative to associative language and threaded messages.
	Use communicative multitasking purposefully to achieve company goals.
Rhetorical Literacy	Understand the nature of an IM relationship (e.g., employer, supervisor, peer/coworker, client, outside contact).
	Practice respectful IM talk with each of the above audiences.
	Use the IM chat for specific purposes and in particular communication situations (e.g., schedule meetings, ask questions, make social connections that smooth business).
	Evaluate language level (e.g., formal, informal, familiar/slang) for the setting and the participant/s in the chat.
Social Literacy	Know when to focus on work, when to socialize with coworkers, and how to move between these goals..
	Know how and when to shift roles from supervisor to coworker to help the work progress.
	For supervisors and team leaders, learn how to use IM to gain adherence to a policy or task, and when and how to use IM for mentoring, praise, and admonishment.
	Take personal responsibility for the message that an IM can send about participants and the company regarding word choice; tone; IM name; and personalization of icons, type/font size, color, and away messages.
Technological Literacy	Learn how to use the technology to all capacities sanctioned by the workplace (e.g., text messaging, group meetings, file transfer, video/voice capability, and message saving).
	Understand how to follow security protocols for whether and how to download files obtained through IM or using hyperlinks.
	Determine how IM technology can best assist with particular tasks, especially those requiring real-time collaboration.
	Balance IM use with other available technologies like e-mail to the advantage of the task, workplace, and interpersonal relations.
Ethical Literacy	Determine the ethical implications of using IM for particular interactions, to include archiving them.
	Make decisions about ethical issues, such as of monitoring presence awareness for worker activity, based on professional ethical principals.
	Recognize personal responsibilities in using IM for completing tasks and interacting with clients.
	Understand the company's policies for social uses of IM in varied situations.
Critical Literacy	Consider how others are affected by workplace IM messages.
	Determine how different stakeholders might define and/or understand an effective IM interaction.
	Recognize how corporate and personal stances might be different and similar in various IM use scenarios.
	Evaluate the effects of communicative multitasking and use these as guides to producing ethical and effective IM interactions.

than in a chat room, through a message board, or during face-to-face talk with the same people? If so, how? How does one know to adjust register and switch from language like "how goes?" to "Hi, Bob. How are you today?" When is "Hey Bob" or "hey bob…you there?" appropriate in professional settings? Are social and workplace rules more or less forgiving in an IM chat environment than, perhaps, in e-mail or other asynchronous forums?

Training Scenario 3: IM and Individual Responsibility

IM is not a neutral tool. Its intention is to enable users to communicate with each other; communication always goes beyond writing and reading skills to carry overtones relative to rhetorical purpose, social levels, technological choices, ethical issues, and critical thinking. One non-neutral dimension of IM is its personalization capabilities and how users in particular might actually use them (see, for example, Selber, 2004,

pp. 86, 90). The artifacts of personalization may show that some IM users are less savvy about the visual, aural, and textual rhetoric of their interactions than employers would prefer. In the workplace setting, are personalized icons, wallpaper, sounds, and emoticons marketed as "smileys" considered appropriate? Why or why not? Under what conditions? Under what conditions, if at all, is it acceptable in particular work environments to create personalized messages and profiles? What rhetorical, social, or ethical considerations should guide such creations? When, if at all, is it acceptable to link to outside Web sites or to prompt other users to access those sites?

Training Scenario 4: Saving and Archiving IM Messages

IM clients often enable either automatic or user-based saving of completed interactions. Different from telephone calls or conferences, these saved chats can be archived to create useful text-based records of decision processes, tasking, and other communications. Where laws require e-mail but not telephone conversations to be archived, how should IM which is a hybrid, be treated? Who needs to be informed that a particular chat is being saved? Does being informed constitute giving permission, or is permission not an issue when communicating in a business environment? When is it ethically permissible to save an IM in which a client or subcontractor has participated? Do individual participants have any legal or ethical say over whether their words can be saved? What can be done legally and ethically with such archived interactions? How long should they be saved? Should all participants have access to the archived interaction?

Training Scenario 5: Encouraging Communicative Multitasking

By its nature, communicative multitasking that involves IM requires an active user who is capable of shifting awareness and cognition to a wide variety of communicative tasks. For certain kinds of jobs, one might find employees switching focus rapidly and often with a variety of interlocutors and alternating single channel, simultaneous multithreaded with simple and complex multichannel communicative multitasking. Many IM users seem to have developed these skills without any formal prompting or training. When does communicative multitasking represent a positive series of interactions? At what point does a worker need to slow down or focus on a single communicative task? Is this a personal or corporate decision? In what scenarios would the kinds of communicative multitasking described in this chapter be helpful or harmful to the corporate goals? What kinds of cognitive distress or physical fatigue might an overuse of this skill set create? What are the warning signs? Who would benefit from training in communicative multitasking and why? How can supervisors best assist employees in developing and/or moderating their own communicative multitasking skills?

FUTURE TRENDS

We expect that IM use will continue to grow in workplace settings—not because it is a trendy digital tool, but rather because the youngest workers are bringing well-honed IM literacy and communicative multitasking skills to bear on the workplace. IM is a natural fit for many employees and a potentially powerful assistant to group-based, collaborative tasks and enterprises. Nonetheless, businesses would benefit from talking with employees—either through formal training or informal opportunities—about the benefits and detriments of IM chat in their particular settings.

Additionally, there is a need for technical communication specialists to collaborate with business leaders and computer scientists in considering the ramifications for human communication that digital communication technology like IM seeks to enable. Take, for example, presence awareness

needs. Because presence awareness is a feature that technology researchers consider important to effective CMC, research into presence awareness and development of presence awareness tools similarly address a key question: "What other cues of activity should collaborators share to help coordinate their work?" (Tang & Begole, 2003).

Some awareness services innovations have already been developed to this end. For instance, awareness services innovations that use and increase presence awareness include "Awarenex" (a prototype for understanding the context of user availability for initiating contact and negotiating conversation), "Rhythm Awareness" (an analytical system for predicting future availability of IM users based on past usage), and "Lilsys" (a sensor-based sign system that infers when colleagues who are present at the computer may not be "mentally receptive to being interrupted") (Tang & Begole, 2001). Because social interaction and human connectedness appear to be linked inherently to presence awareness via synchronicity, innovations such as these may be the future of IM chat. Yet, is it a valid practice to use digital indicators as to whether someone can talk, such as with "Awarenex" and what does such use mean in terms of business communication practices? Or, as with "Rhythm Awareness," if the technology predicts whether one is available for interaction based on past usage, what does that mean for users who remain connected online whether or not they are physically present to the computer?

If users maintain a "false" presence, whether purposefully or not, how would such a technology interpret their availability and how would that interpretation influence different audiences like professional supervisors? Indeed, if "Lilsys"-type technology appears to produce realistic and/or reliable signs that a user is "mentally receptive" to a message, what does that mean for reading and writing literacy or for communicative multitasking? Of what different IM characteristics should users then become critically aware and how will such awareness translate into different communi-

cation practices when using future iterations of IM technology or in varying communicative contexts? Finally, in what ways have the users themselves defined presence awareness as necessary to their IM communications? Indeed, how have these users inspired the thinking of technologists as they develop new presence awareness innovations? A collaborative effort at answering questions such as these will become more necessary as IM takes its place among other digital tools adapted to business communication.

CONCLUSION

We have argued that IM is an important communication tool that businesses can and should sanction and prepare their workers to engage. The unique qualities of IM in terms of presence awareness, synchronicity, hybridity, and interactivity have created a unique literacy skill set, as well as the phenomenon of communicative multitasking in its various forms. A first step toward using IM technology to its fullest advantages in business settings involves training of the kind outlined in this chapter. Another step involves thoughtful discussions among business leaders in terms of using IM and taking advantage of the IM-based literacy and communicative skills that their employees bring to the table. Yet another step addresses the need for researchers in technical communication to collaborate with computer scientists, technologists, and corporate managers in creating future versions of IM that respond to rapidly changing business communication practices and requirements while attending to the nature of successful and thoughtful interactions. From our perspective, technical communication educators and researchers should join with business representatives to jointly research questions that address the intersections of synchronous communication and IM technology.

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KEY TERMS

Channel: The link between the two communicators—IM, telephone line, e-mail.

Communicative Multitasking: The process of having more than one communicative exchange (for example, IM, telephone, or face-to-face) with one or more interlocutors at the same time.

Computer-Mediated Communication (CMC): Any communication that occurs through computer technology, such as IM or e-mail.

Hybridity: The nature of computer-mediated talk, which has elements of both spoken and written language; people who communicate via IM can write much like they would speak in person or on the telephone.

Interactivity: The degree to which a reader or listener can respond interpersonally with the writer or speaker.

Phatic: Oral and typed language such as "hmmm," "uh huh," "thinking," and "k" (for "okay") that provides backchannel cues to help speakers convey that they are present and participating in the conversation.

Presence Awareness: Both a technical feature of IM that indicates the availability of another person a chat and a genuine sense of one's physical or virtual presence—the immediacy of one person's awareness of another using CMC.

Synchronicity: The quality of being synchronous, or "real-time" in communication; for example, an IM requires two people who are simultaneously connected to engage an initiated interaction, whereas an e-mail, which is asynchronous, does not require the recipient's immediate presence and participation.

Thread: The exchange between two communicators; each topic of discussion is a separate thread.

ENDNOTES

[1] Two popularly accessible forms of chat were established in the 1980s: Internet Relay Chat (IRC) and AOL's closed network system (Holmevik, 2004; Miller, 2001). In 1996, IM was introduced to the Internet as *ICQ* (literally "I seek you"), a protocol that most contemporary users would recognize (Miller, 2001, pp. 210-211), and it found increasing popularity in both social and workplaces—as well as increasing digital sophistication—in no-cost clients like AOL's *AIM* and *ICQ*, Microsoft's *MSN Messenger*, Yahoo's *Yahoo! Messenger*, *Pidgin*, *Trillion*, and *Jabber*.

[2] Because an IM is delivered to the recipient's computer immediately, there is a negligible time lag between message sending and reception, making it a pseudo-synchronous tool. Using such a distinction, a genuinely synchronous technology is an electronic whiteboard where both interlocutors can view the text as it is being typed or see graphics as they are being drawn without clicking a "send" icon; having made this distinction, for the purposes of this chapter, we treat IM as a synchronous tool.

[3] In a small study of four students' essay writing, Christine Hult and Ryan Richins (2006) found that even though the writing showed some linguistic characteristics of IM language, the students stated their awareness of "the needs of a certain writing genre" and believed that they would "employ the appropriate tools for that genre." However, there were too many variables to attribute the IM-like attributes of the writing to IM alone, and the researchers concluded that helping student writers to become "conscious of the written genres they are using and the differences among them and to help them to question and to probe" beyond surface issues in writing would assist them to circumvent potential negative effects from IM.

4   For a more complete discussion of communicative multitasking, contact the authors to see "A Theory of Communicative Multitasking" (in progress).

5   In research into the effects of IM interruptions on various tasks, which is aimed at assisting IM developers, Czerwinski, Cutrell, and Horvitz (2000) found that IM interruptions interfere more with particular, "stimulus-driven search tasks" than those of "effortful, cognitively taxing search tasks." Nonetheless, they suggest "that experience handling the interrupting tasks reduces their harmful effects over time."