

Understanding Instant Messaging: Gratifications and Social Presence

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Abstract

This paper explores the Instant Messaging phenomenon within the college sector—the first generation to grow up with the Internet. Drawing on the uses and gratifications approach and social presence theory, a survey of 443 IM users reveals five gratifications sought and obtained: social utility, interpersonal utility, convenience, entertainment/relaxation and information. The results also demonstrate the important role of social presence in IM use. The value of integrating social presence into the uses and gratifications paradigm and other theoretical and practical implications are discussed.

Keywords--- Instant messaging; social presence; uses and gratifications.

1. Introduction

Instant Messaging (IM) has become a popular mode of communication for people with access to the Internet. Some people do not use it and never will, but for a rapidly growing number of people IM is a useful communication tool, and for some it is a vital part of their lives. The telephone is no longer necessary for a person to be connected constantly to his or her family and friends. One can simply turn on their computer and log onto IM and hold simultaneous conversations, without long distance fees.

Although the IM phenomenon has received much media attention, the current IM literature is limited. Most studies narrowly focus on IM use in work-related activities within the business community (e.g., [1], [2]; [3]). Even fewer studies have addressed the first generation that grew up with the Internet and the largest group of IM users: college students. This study addresses this limitation by exploring the potential predictors of IM use within the collegiate sector. Guided by two sets of theory, uses and gratifications and social presence theory, this study specifically (1) examines the gratifications sought (GS) and obtained (GO) by college student IM users, and (2) examines the effects and role of social presence in IM use. Consequently, the study aims to extend uses and gratifications and social presence theories.

2. Instant Messaging

Instant messaging is software that allows computer

users to send and receive short text messages in real time. Unlike online “chatting,” a group activity, instant messages are exchanged between only two users (who can both see what is being typed). All one needs to join IM is a computer and an Internet connection. Most IM programs (the biggest at this writing are AOL Instant Messenger, MSN Messenger and Yahoo! Messenger) are free and easy to download and install.

3. Uses and Gratifications and Instant Messaging

Research about the Internet has utilized the uses and gratifications approach to examine the motivations behind the use of the Internet in general and different online activities such as the World Wide Web, electronic bulletin boards, and email. Studies of motivations for Internet use in general find that, as with television, audiences use it to satisfy needs such as entertainment, escape (or passing time), information seeking, and social interaction (e.g., [4], [5]). In addition, people use particular Internet services like email (e.g., [6]) and electronic bulletin boards (e.g., [7]) to satisfy the need for maintaining relationships and/or social interaction.

Despite the rapid and widespread diffusion of Instant Messaging systems there is little research that explores why people use IM. One study examined the motivations for chatting on ICQ, the first IM application [8] and found motives of relaxation, entertainment, fashion, affection, sociability and escape. Other studies on IM suggest that teenagers primarily use IM to increase socializing opportunities [9].

Of equal importance is understanding what benefits audience members obtain from IM use. Although traditional media are not generally reported to fulfill users’ needs fully, one study ([10]) suggests that new media do successfully fulfill audience members’ needs. He found that the majority of people sought increased communication as well as information gathering from email and felt that these needs had been gratified by the service. The study also reported that respondents sought both entertainment and information from the Web and felt that they had obtained both gratifications.

The limited literature on IM use in the workplace suggests IM serves as an effective communication tool for geographically distributed work teams. IM also plays a key role for teenagers in communicating with friends [11]. Although college students constitute a vast majority of IM users, few studies have examined why college students use IM and what they get out of it.

Based on the literature discussed above, the following research question is proposed.

RQ 1. What gratifications are college students seeking and obtaining from using IM? Specifically, what is the relationship between gratifications sought (GS) and gratifications obtained (GO) from IM use?

4. Social presence and Instant Messaging

Social presence is a “sense of being with another in a mediated environment” ([12], p. 14). Researchers have examined social presence in a variety of mediated communication contexts, from low bandwidth interactive text technologies (e.g., email, bulletin board) to high bandwidth audio-visual technologies (e.g., video and computer teleconferencing systems).

Although it was initially studied in relation to such traditional media as audio and closed-circuit television (as well as face-to face communication), social presence is increasingly being acknowledged as an important factor for understanding the effects of new media. Studies suggest that interactive virtual environments created by some Internet technologies evoke social presence. For instance, [13] examined the users’ experience of “being with others” in text-based virtual environment (e.g., MUDs). They surveyed 207 users and 69% reported that they felt a sense of presence with others when they use this technology.

[14] examined the relationship between social presence and various types of CMC. Email was perceived to possess the highest level of social presence, followed by real-time discussion and bulletin board. Such different degrees of impact on social presence, he insisted, “not only come from the attributes of CMC systems, but also the uses and various perceptions of CMC systems” (p. 21).

Other studies suggest that social presence affects the outcomes of CMC use. Some find that social presence is a significant predictor of the user’s satisfaction with interactive television classes [15] and text-based computer conferences [16].

Such findings have implications for the current study. Despite the very limited ability to transmit social cues in short text messages, it is possible that Instant Messaging creates social presence, as email and bulletin boards do, and that this feeling of social presence can lead to heavy usage of and satisfaction with IM.

Based on the literature discussed, the present study attempts to answer the following research question:

RQ 2. What is the role of social presence in IM use? Specifically, how is students’ experience of social presence in IM use related to gratifications sought (GS) and obtained (GO) from IM use?

Finally, the present study aims to investigate how three important concepts—gratifications sought (GS),

gratifications obtained (GO), and social presence are linked to IM use.

RQ 3. How do gratifications sought (GS), gratifications obtained (GO), and social presence predict IM use?

5. Method

An online survey of college students was conducted to address the research questions.

5.1. Sampling

The majority of respondents were drawn from undergraduate communication classes at three universities in the United States (N=508). A total of 602 surveys were completed. Four hundred and forty-three respondents were IM users and 159 were non-users. Among IM users, 45.5% (N=200) were males and 51.3% (N=225) were females. The age of these respondents ranged from 18 to 39 years ($M=20.26$), with three-fourths of them between 18 and 24 years. The sample included freshmen (43.5%, N=188), sophomores (24.1%, N=104), juniors (21.1%, N=91), seniors (8.3%, N=36), and graduate students (3%, N=13).

5.2. Measurement

5.2.1. IM Use behavior. To assess IM use behavior respondents were asked to report (1) how long they have been using IM, (2) how many minutes they use IM in a typical day, (3) how many days they use IM in a week, (4) the average number of minutes they spend on an IM session, and (5) how many IM sessions they have in a typical day.

5.2.2. Gratifications sought (GS) from IM use. To measure motivations or reasons why college students use Instant Messaging, selected motivation items used in previous research on new media such as the Internet [17], e-mail [6] and ICQ [8] were adapted and modified. Additional items from a pilot study were also included in the survey. The final questionnaire consisted of 28 motivation statements (see Table 1). Respondents were asked to state their levels of agreement with the statements on a 7-point Likert scale (1= strongly disagree, 7=strongly agree).

5.2.3. Gratifications obtained (GO) from IM use. To measure gratifications obtained from IM use, the present study followed [18], which distinguish between the measurement of gratifications sought and obtained. In their study, gratifications obtained (GO) were measured after gratifications sought (GS). The same items used to measure GS were used to measure GO, but were slightly reworded. The present study followed this approach. For instance, the first statement for GS, “I use IM to keep up with news” was reworded to “IM actually helps me keep up with news” to measure GO. The same 28 items that were used to measure GS were included in the survey questionnaire (see Table 2). Respondents

were asked to reply using the same 7-point scale employed to measure gratifications sought (1=strongly disagree, 7=strongly agree).

5.2.4. Social presence. To assess the feeling of social presence through IM use the study used 7 items selected from previous studies ([19], [13]) and modified for this context. Respondents were asked to report their levels of agreement with 7 statements on a 7-point Likert scale (1=strongly disagree, 7=strongly agree) (see Table 3).

Table 1. Means, Standard Deviations, and Confirmatory Factor Analysis Results for Gratifications Sought from IM use (N=443)

GS items	M	SD	Loadings
Social Utility	5.45	.98	
▪ I use IM to see what others are up to	5.84	1.28	.76
▪ I use IM to exchange information with people I know	5.84	1.34	.74
▪ I use IM to pass information on to other people	5.27	1.45	.72
▪ I use IM to keep in touch with friends or family members	6.18	1.36	.70
▪ I use IM to keep in touch with friends or relatives who live far away	5.88	1.51	.64
▪ I use IM to let others know I am concerned about them	4.35	1.59	.60
▪ I use IM to feel involved with what's going on with other people	4.78	1.65	.56
Cronbach's alpha			.80
Eigenvalue			3.23
Interpersonal Utility	3.53	1.24	
▪ I use IM because I need someone to talk to or be with	3.84	1.72	.85
▪ I use IM to feel less lonely	4.00	1.79	.82
▪ I use IM to be reassured that someone is there	3.42	1.88	.77
▪ I use IM to get interesting things to talk about	3.55	1.78	.71
▪ I use IM to avoid going out	2.46	1.74	.57
▪ I use IM because it's like fact-to-face conversation	3.54	1.85	.52
Cronbach's alpha			.80
Eigenvalue			3.08
Convenience	5.46	1.08	
▪ I use IM because it's convenient	5.87	1.17	.85
▪ I use IM because it's fast	5.91	1.27	.79
▪ I use IM because it's simple and easy	5.66	1.26	.77
▪ I use IM because it's easier than email	5.51	1.51	.76
▪ I use IM to talk to many people at the same time	5.42	1.77	.68
▪ I use IM because it's easier than making a phone call	4.98	1.73	.65
▪ I use IM to save money without long distance fees	4.86	2.05	.50

Cronbach's alpha			.82
Eigenvalue			3.65
Entertainment/ Relaxation	4.40	1.16	
▪ I use IM because it's entertaining	4.94	1.44	.83
▪ I use IM because it's fun	4.85	1.46	.81
▪ I use IM to pass time when I am bored	5.44	1.55	.71
▪ I use IM to forget about other things	3.18	1.83	.64
▪ I use IM because it relaxes me	3.55	1.58	.63
Cronbach's alpha			.78
Eigenvalue			2.98
Information	3.09	1.25	
▪ I use IM to get information I am looking for	3.08	1.72	.79
▪ I use IM to keep up with the news	2.52	1.62	.73
▪ I use IM to express my personal feelings and opinions freely	3.42	1.88	.68
Cronbach's alpha			.68
Eigenvalue			1.63

Note: Response options ranged from strongly disagree (1) to strongly agree (7).

6. Results

6.1. IM Use Behaviors

The college students who use IM had been doing so for an average of five and a third years (range: 1 - 12, M=5.29, SD=2.48). The majority of respondents (59.7 %, N=258) reported that they use IM daily, 17.4% (N=75) reported using it 5-6 days a week, 10% (N=43) reported 3-4 days, 9.3% (N=40) reported 2-3 days and only 3.7% (N=16) reported using IM once a week.

Students in this sample reported that on a typical day they spend an average of one hour and 40 minutes (SD=118.35 min.) using IM, but responses ranged from five minutes to 16 hours. When asked how many times their IM window pops up on a typical day, students reported that they had from one to 80 IM sessions with an average of 7.78 sessions (SD=9.73). Respondents also reported that they spent an average of 30.06 minutes (SD=47.34) on a typical IM session, but responses ranged from 2 minutes to 7 hours and 17 minutes.

6.2. Construction of Factors for GS and GO

As described above, the same 28 items were used to measure gratifications sought and obtained (although the 28 items used to measure GS were slightly reworded to measure GO). Therefore, it was necessary to match GS factors with their corresponding GO factors. To accomplish this goal, first an exploratory principle component factor analysis (with varimax rotation) for GS was conducted. Confirmatory factor analysis for GO was then conducted to fit the GS factor analysis results. However, this approach failed to produce reliable factors for both GS and GO. Therefore, the reverse approach

was used—that is, after an exploratory principle component factor analysis (with varimax rotation) for GO items, confirmatory factor analyses for GS were conducted.

The following criteria were applied for the selection of GO factors: (1) An eigenvalue of 1.0 or greater was a necessary condition for each factor and (2) each factor had to contain at least two items meeting a 60/40 criterion –i.e., two primary factor loadings of at least .60 with no cross loadings over .40 on any other factor. The analysis yielded five factors. The index based on each GO (and corresponding GS) factor was then tested with Cronbach’s alpha to ensure inter-item or scale reliability. (The resulting GO and GS indices are presented in the next section.)

6.3. Gratifications and IM use

RQ 1. What gratifications are college students seeking and obtaining from using IM? Specifically, what is the relationship between gratifications sought (GS) and gratifications obtained (GO) from IM use?

The first research question concerns identifying GS (motives) and GO (benefits) of Instant Messaging and relationships between GS and GO. As described above, an exploratory principle component factor analysis with varimax rotation was conducted to determine GO factors. The analysis accounted for 60% of total variance and the results are summarized in Table 2.

Table 2. Means, Standard Deviations and Factor Analysis Results for Gratifications Obtained from IM use (N=443)

GO items	M	SD	Loadings
Social Utility	5.34	1.00	
▪ IM actually helps me to keep in touch with friends or family members	5.88	1.37	.74
▪ IM actually helps me to keep in touch with friends or relatives who live far away	5.50	1.27	.63
▪ IM actually helps me to exchange information with people I know	5.42	1.47	.62
▪ IM actually helps me see what others are up to	5.14	1.26	.61
▪ IM actually helps me to feel involved with what’s going on with other people	4.92	1.52	.60
▪ IM actually helps me pass information on to other people	5.30	1.39	.58
▪ IM actually helps me let others know I am concerned about them	4.65	1.51	.56
Cronbach’s alpha			.88
Eigenvalue			4.00
Interpersonal Utility	3.87	1.27	
▪ IM actually helps me to feel less lonely	3.38	1.83	.78
▪ IM actually helps me to be reassured	4.20	1.65	.76

that someone is there			
▪ IM actually helps me to have someone to talk to or be with	4.39	1.63	.74
▪ IM actually helps me to avoid going out	3.31	1.77	.65
▪ IM is actually like fact-to-face conversation	3.56	1.87	.63
▪ IM actually helps me to get interesting thing to talk about	4.05	1.73	.53
Cronbach’s alpha			.83
Eigenvalue			3.90
Convenience	5.64	1.04	
▪ IM is actually easier than email	5.47	1.49	.78
▪ IM is actually easier than making a phone call	4.97	1.75	.75
▪ IM is actually fast	6.03	1.19	.73
▪ IM is actually convenient	6.00	1.23	.60
▪ IM is actually simple and easy	6.01	1.22	.57
▪ IM actually helps me to save money without long distance fees	5.26	1.76	.55
▪ IM actually helps me to talk to many people at the same time	5.72	1.48	.53
Cronbach’s alpha			.82
Eigenvalue			3.49
Entertainment/ Relaxation	5.37	1.26	
▪ IM actually helps me to pass time when I am bored	5.43	1.55	.70
▪ IM actually helps me to be entertained	4.77	1.54	.68
▪ IM actually helps me to have fun	4.32	1.64	.61
▪ IM actually helps me to forget about other things	3.74	1.82	.63
▪ IM actually helps me to relax	3.54	1.66	.50
Cronbach’s alpha			.83
Eigenvalue			3.23
Information	3.51	1.29	
▪ IM actually helps me to keep up with then news	3.42	1.88	.76
▪ IM actually helps me to get information I am looking for	3.38	1.83	.72
▪ IM actually helps me to express personal feelings and opinions freely	3.78	1.79	.62
Cronbach’s alpha			.67
Eigenvalue			2.40

Note: Response options ranged from strongly disagree (1) to strongly agree (7).

As indicated in Table 2, the five GO factors suggest that IM functions to fulfill needs for 1) "social utility"—a need for a sense of community, 2) "interpersonal utility"—a need for individual connection, 3) convenience, 4) entertainment and relaxation, and 5) information.

As indicated in Table 3, all GO factors are positively and significantly correlated with all GS factors. The

strongest correlations are between corresponding gratifications sought and obtained, particularly for convenience and interpersonal gratifications ($r=.83$, $p<.01$ in both cases).

Table 3. Bivariate Correlations between GS factors and GO factors

GO	Social utility	Inter-personal utility	Con-venience	Enter-tainment/Relax-ation	Infor-mation
GS					
Social utility	.78** (.73**)	.24** (.02)	.59** (.54**)	.39** (.26**)	.38** (.28**)
Inter-personal utility	.35** (.13**)	.83** (.77**)	.18** (.04)	.53** (.41**)	.51** (.27**)
Con-venience	.64** (.56**)	.26** (.08**)	.83** (.81**)	.46** (.36**)	.37** (.27**)
Enter-tainment/Relaxation	.45** (.32**)	.46** (.32**)	.46** (.40**)	.81** (.78**)	.45** (.36**)
Information	.41** (.31**)	.42** (.31**)	.28** (.20**)	.45** (.36**)	.77** (.73**)

Note: ** $p<.01$ (2-tailed). Partial Correlations between GS and GO, controlling for social presence, appear in parentheses.

6.4. Social Presence and IM Use

RQ 2. What is the role of social presence in IM use? Specifically, how is students' experience of social presence in IM use related to gratifications sought (GS) and obtained (GO) from IM use?

Means for the social presence measures indicated that the students did experience social presence while using instant messaging (see Table 4).

Table 4. Means and Standard deviations for Social Presence items and index

Items	M	SD
Social presence index	4.42	1.20
▪ I often smile in response to the IM messages that the other person sends in an IM session	5.60	1.33
▪ I often make a sound out loud (e.g., laugh or speak) in response to IM message that the other person sends in an IM session	5.36	1.61
▪ IM messages express feeling and emotion	4.21	1.67
▪ I feel a senses of actually being together with the person I am communicating with when IM am using IM	4.17	1.66

▪ I feel emotionally connected with the person I am communicating with during IM use	4.13	1.59
▪ I feel that I am present with others and the others are present with me during IM use	3.96	1.61
▪ During IM use I feel as if I and the other person are located in the same room	3.52	1.69

Note: Response options ranged from strongly disagree (1) to strongly agree (7).

Pearson correlations indicate that all GS factors were positively and significantly related to social presence (see Table 5). When the college students used IM for social utility, interpersonal utility, convenience, entertainment/relaxation, and information reasons, they experienced social presence. The strongest correlations were between social presence and using IM for interpersonal utility needs ($r=.48$, $p<.01$), between social presence and social utility needs ($r=.41$, $p<.01$), and between social presence and entertainment/relaxation needs ($r=.38$, $p<.01$). These findings suggest that social and interpersonal motives for using IM are highly related to sense of social presence. In addition, respondents in the sample indicated that they felt a high degree of social presence when they used IM for entertainment/relaxation needs.

Table 5. Pearson Correlations between GS, GO and Social presence

Gratifications	Correlations	
	GS VS. Social Presence	GO VS. Social Presence
Social Utility	.41**	.49**
Interpersonal Utility	.48**	.54**
Convenience	.37**	.32**
Entertainment/Relaxation	.38**	.44**
Information	.32**	.37**

** $p<.01$ (2-tailed)

Social presence was also positively and significantly related to gratifications obtained from IM use (see Table 5). Correlations revealed significant relationships between social presence and all GO factors. The strongest correlations were between social presence and GO for interpersonal utility ($r=.54$, $p<.01$), and between social presence and GO for social utility ($r=.49$, $p<.01$). Although significant relationships were reported, GO for information ($r=.37$, $p<.01$) and GO for convenience ($r=.32$, $p<.01$) were less related to social presence than the other GO factors.

It is interesting to note that IM users who either seek or obtain convenience and information gratifications from IM use perceived less social presence, while using IM in order to seek social, interpersonal, and diversion

entertainment gratifications and obtaining these gratifications were linked to higher levels of social presence.

To investigate the mediating role of social presence in the relation between gratifications sought and obtained from IM use, partial correlations were calculated (see Table 4). When social presence was statistically controlled, all correlations between GS factors and GO factors were reduced to some degree. The correlations that were most reduced were the correlation between GS for social utility and GO for interpersonal utility (from .24 ($p < .01$) to .02 (n.s.)) and the correlation between GS for interpersonal utility and GO for convenience (from .18 ($p < .01$) to .04 (n.s.)). Overall, these findings suggest that social presence plays a significant role in the relationships between gratifications sought and obtained from IM.

RQ 3. How do gratifications sought (GS), gratifications obtained (GO), and social presence predict IM use?

To investigate how the overall concepts of GS, GO, and social presence predict IM use, a path analysis was conducted (using Amos software). The model that best fit the data is presented in Figure 1; the relatively good fit is indicated by the chi-square (3.26), p-value (.19), GFI (.998) and RMSEA (.038). The model shows a strong relationship between GS and IM use ($\beta = .71$), which suggests that GS has a direct and significant effect on IM use. On the other hand, GO has an indirect effect on IM use, an effect mediated by gratifications sought; in this model GO directly influences GS rather than IM use.

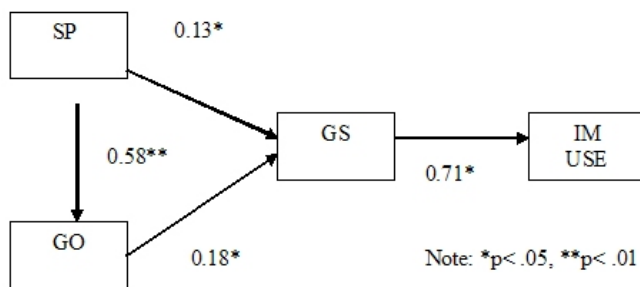


Figure 1. Path model of relationships among GS, GO, and social presence in predicting IM use

The role of social presence in the model is especially interesting. Social presence has indirect effects on IM use via GS and GO. But social presence had a more direct impact on GO ($\beta = .58$) than GS ($\beta = .13$). Again, being influenced by social presence, GO directly affects GS and GS directly affects IM use.

Overall, it can be said that GS was the most important variable that directly influenced IM use, while GO and social presence indirectly affected IM use.

7. Discussion

The first objective of this study was to examine the gratifications sought and obtained by IM users among college students. The study found five salient reasons for using IM among this largest segment of users: social utility, interpersonal utility, convenience, entertainment-relaxation, and information. It was also found that IM gratified those needs successfully.

The second objective of this study was to examine the role and effects of social presence in IM use. The results indicate that even with its low bandwidth, text-only format, IM evokes a sense of social presence—i.e., of “being together” or “emotional connectedness”—and has an important impact on what college students seek and obtain from IM use.

Although all sought and obtained gratifications were positively linked to social presence, the study found that interpersonal utility was the gratification most related to the experience of social presence. College students who use IM for seeking someone to talk to or be with, for being reassured that someone is there, for avoiding loneliness, and/or for getting interesting things to talk about with others perceive to a greater extent that IM messages convey feeling and emotion and feel more of a sense of “being together” and “emotional connectedness” (as if “they are located in the same room”) than those who use IM for seeking other gratifications. Consistent with this, the more college students obtain the interpersonal utility benefits from IM use, the more they feel social presence in comparison to other gratifications.

While IM users seeking interpersonal utility gratifications may be more receptive to feeling a sense of “being together” during IM use, it seems clear that IM’s ability to allow users to hold real time conversations through exchanging short messages with people they know, along with the ability to use emoticons to indicate emotional states, encourages a sense of “being together” among many IM users, despite the limitations of a text-based medium.

The important role of social presence is also seen in its effect on the relationships between GS and GO. Partial correlations between GS factors and GO factors with social presence controlled show that all correlations between GS and GO were reduced to some degree. And in the path analysis, while social presence was an insignificant direct predictor of IM use, with its great influence on GO, social presence turns out to be an important variable in the relation between GS and IM use. In other words, the more college students feel a sense of “being together” or “emotional connectedness” when chatting with another through IM, the more they perceive that IM gratifies their needs, and the more college students feel IM gratifies their needs, the more motivations for their IM use, and so IM use itself, increase.

The findings of the present study have several important implications. First, the results provide empirical evidence that IM users feel a sense of “being together” or “emotional connectedness” when chatting

with another person through IM, a "lean" or low bandwidth channel of communication. This counter-intuitive result suggests the need to better understand social presence and its role in CMC environments. Even when they acknowledge the centrality of the user's perceptions previous CMC studies have followed pioneers Short et al. ([20]) and examined social presence as a characteristic of a medium, while the measures used here emphasize the user's subjective media experience. If supported by future studies, this new conceptualization can in turn help us develop more valid and standardized social presence measures.

Second, the social presence results provide important extensions of the uses and gratifications approach. The demonstrated key role of this new variable in the motivations for and benefits from IM use suggests that uses and gratifications researchers should consider the concept of social presence as an important variable in explaining what audience members do with a variety of media. Future empirical inquiry is required to establish a theoretical model that integrates the concept of social presence into the uses and gratifications paradigm.

Finally, the results suggest that the designers and marketers of IM systems should take into consideration the role of social presence in IM uses and gratifications. By using the concept of social presence as a marketing strategy and in developing new features (e.g., personalized "buddy" icons), the IM industry may be able to encourage more college students, and perhaps others, to use IM to fulfill social and interpersonal needs.

Two limitations in this study should be noted. First, respondents were all college students, most majoring in communication, from three large urban universities in the United States. Clearly, they do not represent the typical home IM user. Therefore, the research results cannot be generalized to the wider potential home-based IM user population. Second, the use of non-probabilistic sampling for universities chosen and self-selection of students taking the survey are acknowledged as restricting the generalizability of this study. However, the results constitute a first step toward a better understanding of the reasons for, the nature of, and the benefits produced by the use of the increasingly important new medium of IM.

References

- [1] Hansen, K., & Damm, C. (2002). *Instant collaboration: Using context-aware instant messaging for session management in distributed collaboration tools*. Paper presented at NordiCHI, October 19-23, 2002, Denmark.
- [2] Herbsleb, J. D., Atkins, D. J., Boyer, D.G., Handel, M., & Finholt, T. A. (2002). Introducing Instant Messaging and Chat in the workplace. In *Proceedings of the SIGCHI conference on Human factors in computing systems: Changing our world, changing ourselves* (pp.171-178). New York: ACM Press.
- [3] Nardi, A. B., Whittaker, S. & Bradner, E (2000). Interaction and outercation: Instant messaging in action, *Proceedings of CSCW' 2000* (pp. 79-88). New York: ACM Press.
- [4] Ferguson, D. A. & Perse, M. E. (2002). The World Wide Web as a functional alternative to television. *Journal of Broadcasting & Electronic Media*, 44(2), 155-174.
- [5] Kaye, B. K. (1998). Uses and Gratifications of the World Wide Web: From Couch Potato to Web Potato. *New Jersey Journal of Communication*, 6(1), 21-40.
- [6] Stafford, L., Kline, L. S., & Dimmick, J. (1999). Home E-mail: Relational Maintenance and Gratification Opportunities, *Journal of Broadcasting & Electronic Media*, 43(4), 659-669.
- [7] James, M. L. (1992). *An exploratory study of the perceived benefits of electronic bulletin board use and their impact on other communication activities*. Unpublished Doctoral Dissertation. Florida State University.
- [8] Leung, L. (2001). College student motives for chatting on ICQ, *New Media & Society*, 3(4), 483-500.
- [9] Grinter, E. R. & Palen, L. (2002). Instant messaging in teen life. In *Proceedings of the 2002 ACM conference on Computer Supported Cooperative Work* (pp. 21-30). New York: ACM Press.
- [10] Hunter, C. D. (1996). *The uses and gratifications of Project Agora*. Unpublished undergraduate thesis. Boston College. [Electronic Version] Retrieved May 2, 2004, from http://www.asc.upenn.edu/usr/chunter/agora_uses/
- [11] Eldridge, M. & Grinter, R. (2001). *Studying text messaging in teenagers*. Retrieved May 2, 2004 from http://socio.ch/mobile/index_mobile.htm
- [12] Biocca, F., Harms, C., Burgoon, J. (2003). Toward a More Robust Theory and Measure of Social Presence: Review and Suggested Criteria. *Presence: Teleoperators and Virtual Environments*, 12(5), 456-480.
- [13] Towell, J. & Towell, E. (1997). Presence in text-based networked virtual environments or "MUDDS." *Presence: Teleoperators and Virtual Environments*, 6(5), 590-595.
- [14] Tu, C. H. (2002). The impact of text-based CMC on online social presence. *The Journal of Interactive Online Learning*, 1(2). Retrieved July 13, 2004 from <http://www.ncolr.org>
- [15] Hackman, M. Z., & Walker, K. B. (1990). Instructional communication in the televised classroom: The effects of system design and teacher immediacy on student learning and satisfaction. *Communication Education*, 39(3), 196-206.
- [16] Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *The American Journal of Distance Education*, 11(3), 8-26.
- [17] Papacharissi, Z. & Rubin, A. M. (2000). Predictors of Internet Use. *Journal of Broadcasting and Electronic Media*, 44, 175-196.
- [18] Palmgreen, P., Wenner, L. A., & Rayburn, J. D., II (1980). Relations between gratifications sought and obtained: A study of television news. *Communication Research*, 7, 161-192.
- [19] Lombard, M., & Ditton, T. B. (1997). At the heart of it all: The concept of Presence. *Journal of Computer-Mediated Communication*, 3(2). Retrieved March 10, 2004 from <http://www.ascusc.org/jcmc/vol3/issue2/>
- [20] Short, J.A., Williams, E, & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley & Sons, Ltd.