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Embedding the Internet in the Lives of College Students

Online and Offline Behavior

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The Internet is increasingly becoming embedded in the lives of most American citizens. College students constitute a group who have made particularly heavy use of the technology for everything from downloading music to distance education to instant messaging. Researchers know a lot about the uses made of the Internet by this group of people but less about the relationship between their offline activities and online behavior. This study reports the results of a web survey of a group of university undergraduates exploring the nature of both online and offline in five areas—the use of news and information, the discussion of politics, the seeking of health information, the use of blogs, and the downloading of media and software.

Keywords: *Internet; college students; information technology; online behavior; news; blogs; downloading*

As the Internet continues to diffuse, it becomes increasingly a part of everyday life. The Pew Internet and American Life Project (2005) study has shown the "virtual sprawl" of the Internet has affected contemporary U.S. society in both predictable and unanticipated ways. Therefore, identifying and predicting relationships between online and offline practices is a vitally important pursuit. This study focuses on a subset of the population of Internet users whose actions have been strong predictors of Internet trends—college students (Pitkow & Kehoe, 1996). Embeddedness and its social contours are examined using five areas familiar to online research: use of news, political discussion, file sharing, use of weblogs, and health information. This study is unique in that it considers these factors that indicate embeddedness simultaneously instead of individually or dyadically.

Three overarching research questions drove this inquiry. First, how embedded is the Internet in the everyday lives of students? Second, how do online and offline activities interact in college students' lives? Last, what demographic indicators influence the nature of Internet embeddedness? By virtue of purposively sampling the heaviest (Pew Internet and American Life Project, 2005) and youngest adult users, emerging sociocultural patterns may be identified and contextualized with current ones.

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The Five Areas of Offline and Online Activity

The first area of inquiry is into the news habits of college-aged audiences, which of course have been scrutinized for years. The shrinking of this cohort has been well established (Annual Report on American Journalism, 2005; General Social Survey, 2004). Of particular importance to this study is the fact the online news audience is growing generally, but also specifically among young U.S. adults aged 18 to 29 (Annual Report on American Journalism, 2005). Several reports suggest that those who spend more time seeking out news online are higher users of news offline (Althaus & Tewksbury, 2000; Annual Report on American Journalism, 2005).

The Internet, therefore, is generally conceptualized as a supplement to, not a competitor of, offline news media activities—specifically news consumption. Althaus and Tewksbury (2000) actually found that undergraduates were spending more time on the web at the expense of television entertainment, not news programming. This study seeks to examine this phenomenon in closer detail and place it in the larger context of college students' lives.

The second area examines the political discussion patterns of students in online and offline environments. Though the interactive nature of the Internet and its democratic capacity have been well established (Anderson & Cornfield, 2003; Blumler & Coleman, 2001), actual "e-citizens," those who exercise the democratic utility of the Internet, have been understudied. Most scholars now position the Internet as both vice and virtue to civil society. Habermas (1991) idealized the public sphere in coffee houses, societies, and salons; we now seek to examine which students use the cyber salon and how they use it. Thus, this study will place into context online political discussion as a replacement, supplement, or impediment to offline political talk.

The third area examines weblog use on campus. Generally, blogs have increased in popularity among Internet users, specifically among those who tend to be "young and internet-savvy and connect to the Web via broadband" (Annual Report on American Journalism, 2005, p. 10). Blogging has received increased attention in both professional and academic circles as it becomes more prevalent (Pew Internet and American Life Project, 2005) and more powerful, even though they are not yet created or regularly read by a majority of Americans (Saad, 2005). Gill (2004) and Gillmor (2003) considered blogging to be participatory journalism, and weblogs have already been the source of breaking stories in the mainstream press.

The blogosphere represents a public space that may democratize the Internet (Carroll, 2003) and approximate Habermas's ideal public sphere (Wijnia, 2004) through the proliferation of discourse by ordinary citizens. There is evidence, however, that as the blogosphere grows, it more closely resembles the offline world and therefore runs the risk of being co-opted by traditional sources of power. As such, this study aims to examine the role blogs play on campus, where a cohort of early adopters might be expected.

In the fourth area, file sharing, we wanted to know how online ethicality relates to ethical decisions in the real world. File sharing has become a reality of the Internet age. A national attitude important to this study is that "49% of all Americans and 53% of Internet users believe that the firms that own and operate file-sharing networks should be deemed responsible for the pirating of music and movie files" (Pew Internet and American Life Project, 2005, p. 1). One study of Canadians between 18 and 29 found that they were much

more likely than the general population to illegally download software, cheat on exams, and shoplift (Pedwell, 2005). This study examines students' attitudes about similar offline behaviors and relates downloading activity to those spheres of social life.

The final area considered in this study is one of the most potent and personal uses of the Internet: health information. This information is among the most sought-after information online, with 80% of online users referring to the Internet for health-related queries, and is one of the few where women are the dominant users, by a margin of 82% to 75% of those online (Pew Internet and American Life Project, 2005).

Although a veritable world of information exists online and many sites are well received, health information seekers rarely act without also consulting a physician (Harris Interactive, 2005; Pew Internet and American Life Project, 2002). Many also seek advice from family and friends "when identifying symptoms, determining possible treatments, and making particular lifestyle changes" (Dutta-Bergman, 2005, p. 4). For these reasons, this study aims to incorporate how going online interacts with making offline health decisions and adds an important dimension in measuring Internet embeddedness.

Through integrating data in five distinct areas of everyday life, this study ascertains both how embedded the Internet actually is in students' lives and how this influences and compares to their offline behaviors. The results of this study may provide critical insights into long-term effects the Internet may have on social trends in our lives both online and offline.

Method

A web-based survey of online and offline behavior was conducted at a large Midwestern state university that is particularly technologically sophisticated, with high-speed Internet and wireless access widely available. Students were recruited from large lecture classes in several disciplines on campus. Though the study makes no claim of randomness, the mean age, gender split, and other demographics were similar to the university's population as a whole. Based on these similarities, we feel somewhat comfortable reporting statistical significance for the study.

In March 2005, a total of 374 students completed the questionnaire, which included 37 question areas covering the five areas of inquiry already identified. A series of demographic questions and Internet-use questions completed the survey. All questions were presented in fixed-response format. Completed surveys were entered into an SPSS database for analysis.

Of the students completing the study, 49.5% were males and 49.7% were females. The age range was from 18 to 35, with a mean age of 20. The largest group of respondents was freshmen (43.2%), followed by sophomores (25.7%), juniors (19.5%), and seniors (11.6%).

Findings

Respondents to the survey went to the Internet daily, on average for 4.4 hours. Overall, students saw the Internet as having a positive impact on their lives. Specifically concerning news habits, the majority of students said they preferred to consult online sources over offline sources for news and information because of the convenience (64.0%) rather than

the depth (6.5%) or range of viewpoints (10.0%). Only 12.5% of the respondents said they did not prefer online to offline sources. Yet when it comes to political discussion, the second area of inquiry, most of the respondents preferred offline discussions to those conducted online. Of the students, 62.0% said they agreed or strongly agreed with the statement that they were most likely to discuss politics in person, whereas only 13.0% said they agreed or strongly agreed with the statement that they were likely to discuss politics on the Internet.

The third area of focus was blogging, and in this study 21.7% of the respondents said they owned a blog, yet only 11.0% characterized their use of blogs as active or very active. An even smaller percentage said they used blogs for news and information often or very often (10.3%), but 20.7% said they used blogs for entertainment often or very often. Comparable offline activity was measured by their keeping of a diary (57.3% had done so for at least several weeks) and writing letters to the editor of a publication (37.5% had written at least one letter).

When examining file sharing, it was unsurprising to find that 54.6% of the students said they download music from the web at least once per week. However, fewer of them reported downloading movies (13.0%), television programs (10.8%), and software (11.2%) with the same once-per-week frequency. Students justified their actions by agreeing with the statement that CDs and movie tickets were overpriced (86.8%), but they were not naive about the consequences of their actions. A full 73.1% of the respondents said that it is very easy or somewhat easy to be tracked for their actions in real life based on Internet use, and nearly half said that it is somewhat or quite likely that an illegal downloader could face penalties for his or her offences. As for related online activities, more than half (56.1%) said they would likely illegally download their textbooks if that were possible, and 32.9% would steal them from the bookstore in real life.

In the final area under investigation, health information seeking, 73.4% of respondents said they had ever used the Internet to find that information. But only 27.8% said they consulted the Internet often or very often about a personal health issue, whereas 14.9% said they use the Internet for diagnosing a personal health issue often or very often. Interestingly, only a small number said they discussed Internet-based information with their doctors often or very often (16.2%).

Heavier and Lighter Internet Users

In other studies of Internet use, researchers have concluded that heavy users spend less time with their friends and family than do light users (Nie & Erbring, 2000; Nie & Hillygus, 2002; Kraut et al., 2002), though a later study by Kraut et al. (2002) suggested that as users became more experienced, they returned to their normal social interactions. No difference was found in political activities offline versus online by Katz, Aspden, and Reish (1997), and it has also been reported that those who heavily relied on the Internet for health and political reasons were also heavy users of traditional media (Neustadtl & Robinson, 2002).

We compared heavy users to light users in terms of both online and offline activities using *t* tests with low (3 hours or less each day) and high (4 hours or more) use groups.

We found that heavy users consulted the Internet more for news, discussing politics, downloading software, using blogs for entertainment, and diagnosing personal health. They were also more likely to characterize their blog use as very active and to maintain their own blogs.

Predicting Online Behavior

Comparable measures of offline and online activities for news use, political discussion, blogging, use of music and video entertainment, and health information seeking were taken, in most cases, through multiple variables. For example, media news use offline was measured through frequency of reading newspapers, watching network television and cable television, and listening to radio. In each case where there were multiple variables to measure an activity, we summed them. Once reliable scales (all reached at least an α of .76 or higher) were created for both offline and online constructs, we correlated them with several demographic variables measured in the survey.

In a few cases, when a particular demographic variable was significantly correlated with the online activity (e.g., political communication online with being male), it was also correlated with the offline activity. Surprisingly, age significantly correlated with any online or offline activity, even though the majority of the students fell in the 18 to 22 range. However, age was negatively correlated with seeking news and information on the Internet and seeking health information offline. Older students were also more likely to buy CDs of favorite or new artists (rather than download) than were younger students.

Females were less likely to seek news and information online, discuss politics online or offline, download media, or buy CDs than were male students. But females were much more likely to have kept a diary when they were young.

Those students who declared their political affiliation as Democrat or some other liberal political view leaning in that direction were more likely to discuss politics either online or offline than those students who said they were neither liberal nor conservative or conservatively affiliated (or those leaning that direction).

If students said they were affiliated with a religious group, they were less likely to discuss politics offline but more likely to consume media for news and information than those who claimed no religious affiliation. They were also less likely to download and to use blogs.

Finally, a series of multiple regressions were used to test the effect of several demographic variables and other dependent variables on the five online activities. Variables were entered in blocks, and nothing was significant in the block with only the demographic variables predicting use of online news and information. When the offline comparable activities were added, only using television news was a significant predictor. It remained significant in the third block, along with two attitudinal variables—expressing positive feelings about online sources and the Internet's impact on the respondents' ability to get information (adjusted $R^2 = .19$).

The regressions for predicting the discussion of politics online revealed the strongest relationships. Three other online activities were strong predictors: downloading behavior, blogging, and seeking health information online (see Table 1).

Table 1
Regression Analysis Summary for Predicting Discussing Politics Online

	Block 1	Block 2	Block 3
Gender	–.129*	–.074	–.053
Hours spent online	.129*	.156***	.081
Age	.027	.058	.012
Political affiliation	–.163**	–.058	–.058
Declared religious affiliation	–.034	.060	.087*
Discussing politics offline		.528***	.440***
Preference for online sources		.086	.065
Internet affected ability to exchange personal thought			–.004
Downloading			.177***
Blogging			.209***
Online health[a]			.171***
Adjusted R^2	.045	.313	.437

Note: $R^2 = .437$.
a. Measured as seeking health information or trying to diagnose a disease online.
*$p < .05$. **$p < .01$. ***$p < .001$.

Blogging was best predicted by discussing politics online, the length of time spent online, the belief that the Internet has affected the ability to keep in touch with family and friends, and not being religiously affiliated. The offline activity of sending a letter to the editor was also a significant predictor as was keeping a diary (adjusted $R^2 = .07$).

The fourth set of regressions for predicting downloading behavior showed gender as the strongest predictor in all three regressions (being male), followed by discussion of politics online. Because music downloading was relatively pervasive, we used a downloading scale that included the downloading of television programs, movies, and software. The only other variables that affected downloading were how much respondents believed the Internet had affected respondents' ability to keep in touch with family and friends and using the Internet for health information seeking (adjusted $R^2 = .20$).

Although seeking health information online is widely practiced in the adult population, we thought it was less likely that students would participate in this activity. However, as with the above regressions, other online activities—of downloading, blogging, and discussing politics online—were significant predictors, as was being female and the decision to consult an online source rather than an offline source when seeking health information (adjusted $R^2 = .22$).

The most important pattern across the several online activities is that other online activities are important predictors. It is another case of "the more, the more." Discussing politics online was predicted by downloading activity, blogging, and using the Internet for health information. Discussing politics online predicted downloading activity. Downloading and blogging activity predicted using the Internet for health information. Online behaviors are thus interwoven with one another in producing a cumulative effect of the Internet being increasingly embedded in the lives of college students. Although it can not be extrapolated with statistical certainty, identifying this trend among a group of heavy users suggests

that in the future (if not presently), it is likely this trend may well extend to the general population.

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