

GROWING UP ONLINE

Young people jump headfirst into the Internet's world

BY BRUCE BOWER

As a conversation unfolds among teenagers on an Internet message board, it rapidly becomes evident that this is not idle electronic chatter. One youngster poses a question that, to an outsider, seems shocking: "Does anyone know how to cut deep without having it sting and bleed too much?" An answer quickly appears: "I use box cutter blades. You have to pull the skin really tight and press the blade down really hard." Another response advises that a quick swipe of a blade against skin "doesn't hurt and there is blood galore." The questioner seems satisfied: "Okay, I'll get a Stanley blade 'cause I hear that it will cut right to the bone with no hassle. But ... I won't cut that deep."

Welcome to the rapidly expanding online arena for teenagers who deliberately cut or otherwise injure themselves. It's a place where cutters, as they're known, can provide emotional support to one another, discuss events that trigger self-mutilation, encourage peers to seek medical or mental-health treatment, or offer tips on how best to hurt oneself without getting caught.

The conversation above, observed during a study of self-injury message boards, occupies a tiny corner of the virtual world that children and adolescents have aggressively colonized. Psychologist Janis L. Whitlock of Cornell University, the director of that study, and other researchers are beginning to explore how young people communicate on the Internet. The scientists are examining how various online contacts affect a youngster's schoolwork, social life, and budding sense of identity. Evidence also suggests that the Internet has expanded the reach of health-education efforts to teens in distant lands and provided unique leadership opportunities to a global crop of youngsters.

New findings, including six reports in the May *Developmental Psychology*, indicate that the Internet holds a special appeal for young people, says psychologist Patricia Greenfield of the University of California, Los Angeles (UCLA). That's because the Internet provides an unprecedented number and variety of meeting places, from message boards to instant messaging to so-called social networking sites such as *myspace.com*.

The one constant is that teens take to the Internet like ants to a summer picnic. Nearly 9 in 10 U.S. youngsters, ages 12 to 17, used the Internet in 2004, according to a national survey conducted by the Pew Internet & American Life Project in Washington, D.C. That amounted to 21 million teens, half of whom said that they go online every day. About three in four U.S. adults used the Internet at that time, Pew researchers found.

Teenagers, in particular, provide a moving target for Internet researchers, remarks psychologist Kaveri Subrahmanyam of California State University in Los Angeles. "By the time you publish

research on one type of Internet use, such as blogging, teenagers have moved on to something new, such as *myspace*," she says, with a resigned chuckle.

EXPRESS YOURSELF Cyberspace offers a bevy of tempting opportunities to pretend to be who you're not. Yet teens don't typically go online to deceive others but to confront their own identities, according to recent studies. That's not surprising, Subrahmanyam notes, since adolescents typically seek answers to questions such as "Who am I?" and "Where do I belong?"

Consider the self-injury message boards studied by Whitlock's team. Five Internet search engines led the researchers to a whopping 406 such sites. Most of these attracted participants who identified themselves as girls between ages 12 and 20.

On message boards, as in chat rooms, participants register as members and adopt screen names, such as "Emily the Strange." In many cases, both members and nonmembers can view messages, although only members can post them.

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Whitlock and her coworkers studied the content of 3,219 messages at 10 popular self-injury message boards over a 2-month period in 2005. Many postings provided emotional support to other members. Participants also frequently discussed circumstances that triggered self-mutilation. These included depression and conflicts with key people in their lives. Some message senders detailed ways to seek aid for physical and emotional problems, but others described feeling addicted to self-injury.

More ominously, a substantial minority of messages either discouraged self-injurers from seeking formal medical or mental help or shared details about self-harm techniques and ways to keep the practice secret.

Online teen chat rooms generally don't have specific topics but, like message boards, attract a wide range of kids and present both helpful and hurtful communications. Subrahmanyam and her colleagues examined typical conversations at two online chat sites for teens. They monitored more than 5 hours of electronic exchanges selected at various times of the day during a 2-month stretch in 2003.

On one site, an adult monitored conversations for unacceptable language. The other site was unmonitored.

More than half of the 583 participants at both sites gave personal information, usually including sex and age. Sexual themes constituted 5 percent of all messages, corresponding to about one sexual comment per minute. Obscene language characterized 5 percent of messages on the unmonitored site and 2 percent on the monitored site.

One-quarter of participants made sexual references, which was

not unexpected given the amount of daily sex talk that has been reported among some teens. In the chat rooms, however, all members were confronted with the minority's sexual banter.

The protected environment of the monitored chat room resulted in markedly fewer explicit sexual messages and obscene words than the unmonitored chat room did, Subrahmanyam says. Moreover, the monitored site attracted more participants who identified themselves as young girls than did the unmonitored venue, which featured a larger number of correspondents who identified themselves as males in their late teens or early 20s.

Much of the explicit sexuality on the unmonitored site amounted to degrading and insulting comments, adding to concerns previously raised by other researchers that youths who visit such sites are likely to encounter sexual harassment from either peers or adults.

Subrahmanyam's team also conducted in-person interviews with teens who hadn't participated in the chat room study. The results suggest that only a small minority ever pretend to be other people on the Internet.

Intriguingly, teens who write online journals, known as blogs, often forgo sex talk for more-mundane topics, such as daily experiences at home and school, Subrahmanyam adds. In 2004, she analyzed the content of 600 entries in 200 teen blogs.

Teen blogs offer an outlet for discussing romantic relationships and, especially for boys, disclosing hidden sides of themselves, says psychologist Sandra L. Calvert of Georgetown University in Washington, D.C. In a 2005 online report with David A. Huffaker of Northwestern University in Evanston, Ill., Calvert described entries in 70 teen blogs, evenly split between bloggers who identified themselves as girls and as boys. The ages given ranged from 13 to 17.

Bloggers routinely disclosed personal information, including e-mail addresses and other contact details, the researchers found. Half the blogs of both boys and girls discussed relationships with boyfriends or girlfriends. Ten boys, but only two girls, wrote that they were using the blogs to openly discuss their homosexuality for the first time.

"Teenagers stay closer to reality in their online expressions about themselves than has previously been suggested," Calvert asserts.

NET GAINS Give a middle school child from a low-income household a home computer with free Internet access and watch that child become a better reader. That's the conclusion of a new study that highlights potential academic consequences of the so-called digital divide separating poor kids from their better-off peers.

A team led by psychologist Linda A. Jackson of Michigan State University in East Lansing gave computers, Internet access, and in-home technical support to 140 children. The mostly 12-to-14-year-old, African-American boys and girls lived in single-parent families with incomes no higher than \$15,000 a year. The researchers recorded each child's Internet use from December 2000 through June 2002.

Before entering the study, these children generally did poorly in school and on academic-achievement tests. However, overall grades and reading achievement scores—but not math-achievement scores—began to climb after 6 months of home Internet use. These measures had ascended farther by the end of the study, especially among the kids who spent the most time online.

Participants logged on to the Internet an average of 30 minutes a day, which isn't much in the grand scheme of teenage Internet

use: Teens in middle- and upper-class families average 2 or more Internet hours each day. Only 25 percent of the children in the study used instant messaging, and only 16 percent sent e-mails or contributed to online chat. These low numbers probably reflect a lack of home Internet access among the kids' families and friends. Also, their parents forbade most of the participating kids from contacting strangers in chat rooms.

Still, text-heavy online sites seem to have provided reading experience that translated into higher reading scores and grades, the researchers suggest. Although participants remained below-average readers at the end of the study, their improvement showed promise, according to Jackson and her colleagues.

These findings raise the unsettling possibility that "children most likely to benefit from home Internet access are the very children least likely to have [it]," Jackson's team concludes.

In stark contrast to their poor peers, wealthier middle school and high school students spend much of their time on the Internet trading instant messages with friends, an activity with tremendous allure for young people trying to fit into peer groups, says psychologist Robert Kraut of Carnegie Mellon University in Pittsburgh.

For teens, instant messaging extends opportunities to communicate with friends and expands their social world, Kraut suggests.

He and his colleagues probed instant messaging in interviews with 26 teens in 2002 and in surveys completed by 41 teens in 2004.

Instant messaging simulates joining a clique, without the rigid acceptance rules of in-person peer groups, in Kraut's view. Each user creates his or her own buddy list.

Within these virtual circles, teens become part of what they regard as a cool Internet practice and, at the same time, intensify feelings of being connected to friends, even when sitting by themselves doing homework, Kraut says.

Still, Internet-savvy youngsters typically have much to learn about the social reach and potential perils of online communication, says education professor Zheng Yan of



HELLO OUT THERE — New research probes various ways in which children and teenagers use, and are affected by, the Internet.

the State University of New York at Albany.

Yan interviewed 322 elementary and middle school students in a New England suburb. Participants also drew pictures to show what the Internet looks like and, when told to think of the Internet as a city, what types of people one would see there.

By ages 10 to 11, children demonstrated considerable knowledge of the Internet's technical complexity, such as realizing that Internet sites act as data sources for many computers.

Not until ages 12 to 13, however, did youngsters begin to grasp the Internet's social complexity, such as the large numbers of strangers who can gain access to information that a person posts publicly. Even then, the kids' insight into the online social world's perils remained rudimentary compared with that previously observed in adults.

Children and teens plastering personal thoughts and images on Web sites such as *myspace.com* "often don't realize how many people have access to that information, including sexual predators," Yan asserts. He encourages parental monitoring of Internet activities and regular discussions of online dangers with children.

WORLDWIDE PEERS Adolescents who form global Internet communities show signs of developing their own styles of leadership and social involvement, a trend that Northwestern University psychologist Justine Cassell and her coworkers view with optimism.

Cassell's team examined messages from an online commu-

nity known as the Junior Summit, organized by the Massachusetts Institute of Technology. University officials sent out worldwide calls for youngsters to participate in a closed, online forum that would address how technology can aid young people. They chose 3,062 applicants, ages 9 to 16, from 139 countries.

Those selected ranged from suburbanites in wealthy families to child laborers working in factories. Computers and Internet access were provided to 200 schools and community centers in convenient locations for those participants who needed them.

During the last 3 months of 1998, children logged on to online homerooms, divided by geographic regions. Members of each homeroom generated and voted on 20 topics to be addressed by the overall forum. Topic groups then formed and participants elected a total of 100 delegates to an expenses-paid, 1-week summit in Boston in 1999.

Cassell's group found that delegates, whom the researchers refer to as online leaders, didn't display previously established characteristics of adult leaders, such as contributing many ideas to a task and asserting dominance over others. While the delegates eventually sent more messages than their peers did, those who were later chosen as online leaders—regardless of age or sex—had referred to group goals rather than to themselves and synthesized others' posts rather than offering only their own ideas.

Without in-person leadership cues such as height or attractiveness, online congregants looked for signs of collaborative and persuasive proficiency, the researchers say.

Outside the controlled confines of the Junior Summit, teens even in places where few people own home computers find ways to obtain vital Internet information. Ghana, a western Africa nation in which adolescents represent almost half the population, provides one example.

Researchers led by Dina L.G. Borzekowski of Johns Hopkins Bloomberg School of Public Health in Baltimore surveyed online experiences among 778 teens, ages 15 to 18, in Ghana's capital, Accra.

Two-thirds of the 600 youngsters who attended high school said that they had previously gone online, as did about half of the 178 teens who didn't attend school. Among all Internet users, the largest proportion—53 percent—had sought online health information on topics including AIDS and other sexually transmitted diseases, nutrition, exercise, drug use, and pregnancy.

Out-of-school teens—who faced considerable poverty—ranked the Internet as a more important source of sexual-health information than the students did, the investigators say.

In both groups, the majority of teens went online at Internet cafés, where patrons rent time on computers hooked up to the Internet.

Internet cafés have rapidly sprung up in unexpected areas, UCLA's Greenfield says. She conducts research in the southeastern Mexico state of Chiapas, which is inhabited mainly by poor farming families.

Small storefronts, each containing around 10 Internet-equipped computers, now dot this hard-pressed region, Greenfield notes. Primarily young people frequent these businesses, paying the equivalent of about \$1 for an hour of Internet surfing.

"Even in Chiapas, adolescents are in the vanguard of Internet use," Greenfield remarks. ■

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