We sat across from one another, he in his cracked leather desk chair and me in a wooden chair taken from the hallway. He leaned back, arms crossed, eyes peering over wire-framed glasses. I strummed my fingers nervously on the chipped wood of the chair’s arm.

“I e-mailed you the proposal last week,” I said. “I don’t understand why the topic change came as a surprise.”

“I didn’t get it,” he said simply.

“I sent it a week ago. Maybe it came back; I don’t know.”

“I’ll be honest; I don’t check my e-mail.”


“Ever. Can’t stand it.”

“Right. Should I have called?”

“I don’t check voicemail either.”

My brow furrowed as I contemplated my next move. “So how exactly do you stay in touch with your students between classes?” I asked.

“Well, I expect that they’ll hunt me down on campus if they need anything.”

I sank back in the chair and stared at his desk, scattered with haphazard Post-it Notes and torn notebook paper. A cassette-tape answering machine gathered dust in the corner. An overstuffed planner bulged near my seat. I thought of my own desk at home—neat, sterile, with a laptop and a PDA.

“So, you’re serious? No e-mail and no voicemail? Do you even use the Web?”

He just smiled.

Carie Windham is a recent Phi Beta Kappa and phi Kappa Phi graduate of North Carolina State University. When she is not Googling her own name or instant messaging her friends, she is a master’s student at the University of Ulster in Northern Ireland, where she is studying Irish history as a Mitchell Scholar. This article is based on a chapter written for the EDUCAUSE e-book Educating the Net Generation, <http://www.educause.edu/educatingthenetgen>.

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I can barely recall making plans before the advent of IM, and I’ve rarely attended a campus meeting without first setting it up via e-mail. I get my news, my weather, my directions—even my clothes—from the Web.

Though we sat only four feet away from one another, the distance suddenly felt like light-years. I would find out, in subsequent conversations, that my professor—a relic of the Greatest Generation—did indeed surf the Web when it was necessary. But he preferred the newspaper over CNN.com, the weatherman over WeatherBug, and face-to-face visits over e-mail exchanges. He dusted off journals from the 1980s and flipped through their pages, and he actually knew how to load one of those microfiche machines on the second floor of the university library. He represented, for me, a world I could scarcely remember—a world before getting driving directions on MapQuest, buying books on Amazon.com, and making plans on Instant Messenger, a world when tasks were managed one by one instead of all at once on multiple Web browser windows.

I am a member of the Net Generation. I’ve surfed the Web since the age of eleven, and it has increasingly taken over every facet of my personal and academic existence. I can barely recall making plans before the advent of IM, and I’ve rarely attended a campus meeting without first setting it up via e-mail. I get my news, my weather, my directions—even my clothes—from the Web. And as my peers and I continue to flood the gates of the nation’s colleges and universities, we remain a puzzle to many of the faculty and administrators who try to teach us.

For our generation, the desire to solve the lingering problems of our parents’ generation has left behind.

**Father Google and Mother IM**

Perhaps the greatest indicator of the Net Generation is the desire to solve the lingering problems of our parents’ generation has left behind.

Growing up alongside the wheels of Web-based progress has instilled a feeling within the Net Generation that technological understanding is a necessity for current life and future existence. We cannot succeed in this world, we reason, without an understanding and command of technological advances. This feeling is reinforced by the emphasis on computer literacy in public school curriculums and the predictions that most jobs in the future will rely on some form of computer technology.

To keep pace, Net Generators have become some of the most technologically adept members of society. Our cell phones often serve as Web browsers, digital phones, and game consoles. We keep our schedules and addresses in PDAs and our music in MP3 players. We program our televisions to record movies while we watch a game on another channel.

Technology has also transformed the way that we, as students, complete and turn in our assignments. Typewriters and handwriting are dinosaurs; using PCs and laptops is second nature. Computations are done only through Excel formulas or...
other computer calculations. Presentations are accompanied by PowerPoint slides. Definitions and research are hunted first through Internet Explorer. Journals, news articles, audio files—all are available with a click of our mouse.

The drive to keep pace with current technological trends is not fueled by society's ability to teach these technologies. We are a generation of learners by exploration. My first Web site, for example, was constructed before I had any concept of HTML or Java. I simply experimented with the commands until the pieces fit together. I have installed every addition to my computer myself, often with just my instinct and eyesight to guide me. Likewise, many of my peers rarely pick up the instruction pack to learn programming or a technique. Instead, spurred by our youthful exploration of the Internet, we tend to learn things ourselves, to experiment with new technology until we get it right, and to build by touch rather than tutorial.

Filling the Attention Deficit
In middle school, my second-period health class took a break from memorizing the food groups to learn healthy study habits. Idly flipping the pages of our text, with its images of stick figures seated upright in desk chairs, we were told that the best way to study was to isolate ourselves from the television, the tape player, and the busy sidewalks outside the window. We were to set up a nice study corner with a comfy chair, good lighting, and ample work space.

But if the authors of that text were to evaluate my college study space, they would have found the antithesis of their healthy study habits. Instead of a silent cocoon, Law and Order reruns would be playing in the background. To my left, a trail of jumbled cords would stretch from my bedroom to a laptop on the couch cushion. My IM buddy list would be minimized on the screen, but noise alerts would be turned on to tell me when friends signed on or off the Internet. A collage of browser windows would remain open, one directed to CNN.com so that I could read the day's news between text chapters, another to my e-mail so that I would know exactly when the next piece of mail arrived, and then another to Google, in case the text raised any questions. Somewhere in the middle would be me and an open history textbook.

My study space—characteristic of the average dorm-room suite—reflects my life. With information and accessibility lying at my fingertips, I have grown accustomed to juggling multiple tasks at once, all at lightning speed. In the average online conversation with a friend, for instance, I am likely to be talking online to two others, shopping online at Barnes & Noble, laughing out loud at Friends reruns on the television, and printing notes from a chemistry lecture. It is only in the classroom that my mind is trained on one subject. Keeping my mind on the subject requires some flexibility and creativity on the part of the professor and an understanding of the basic principles that guide the Net Generation.

Interaction
For the Net Gen, the Internet is a vehicle for interaction with a variety of people and materials. It allows us the opportunity to communicate with friends, to participate in chat-room discussions, and to stream video from around the world. In the classroom, we crave much of the same.

The quick fix, for many professors, is to inject interaction by dividing the class into groups for discussion or routine work. But rather than filling our craving for peer-to-peer interaction, these exercises are typically dominated by a few in the group, leaving the rest disengaged and restless. Without clear objectives or an assignment that demands interaction by the entire group, we grow to detest these forays into what we consider "busy work." Instead, professors should focus on meaningful interaction, such as student-led classroom discussions that draw from course readings or simulations. These discussions can help move the classroom discourse beyond a simple recitation of facts, ideas, or dates and into a true engagement of the material and key concepts. Or professors could assign group projects that require participation by all members and that are evaluated based not on a final product but on each individual's contribution.

Although an online society may increase the means of communication, it does not diminish students' need for connection—even with professors. Many Net Geners often leave the computer screen craving actual conversation and interaction with their instructors. To capitalize on this need, faculty should encourage interaction both within and outside the classroom during informal class gatherings or one-on-one meetings. Students should be given the opportunity to interact with faculty and researchers to help develop meaningful relationships and to encourage individual or outside research and exploration.

Exploration
Just as we want to learn about the Web by clicking our own path through cyberspace, we want to learn about our subjects through exploration. It is not enough for us to accept a professor's word. But if the authors of that text were to evaluate my college study space, they would have found the antithesis of their healthy study habits. Instead of a silent cocoon, Law and Order reruns would be playing in the background.
to analyze several articles and discuss their diction. With little direction, we arrived at the conclusion that the authors’ bias was implicit in their work. We left class that day with both a sense of accomplishment and a deeper understanding of the journalistic themes the professor had hoped to explore.

Relevancy
In a world where technologies change daily and graduates armed with four-year degrees are entering the workforce in record numbers, Net Geners increasingly fear that a four-year degree will be neither relevant nor sufficient preparation when the time comes to enter the work force. Consequently, students look for practical applications of their studies.

Establishing relevancy in the classroom is not as simple as it sounds, however. It does not equate to presenting a laundry list of future occupations or examples of a field in the news. Instead, more and more curricula are focusing on the notion of extension, applying the lessons learned in the classroom to real-life problems, institutions, or organizations in the community. For the Net Generation, such curricula speak to two of its values: community service and interaction. Extension is an opportunity to help a community while learning the real-world application of taught material and acquiring relevant skills and experience. As a history major, for example, I spent a semester researching a cultural heritage site on the North Carolina coast. Beyond simply teaching me documentary skills, the experience helped me glue together the pieces of four years of courses to demonstrate how my degree would eventually translate into marketable skills.

Multimedia
For the Net Gen, nearly every part of life is presented in multimedia format. To keep our attention in the classroom, therefore, faculty must toss aside the dying notion that a lecture and a subsequent reading assignment are enough to teach the lesson. The Net Generation responds best to a variety of media: television, audio, animation, and text. The class period needs to be as diverse in structure as it is in content. In my four years of courses, the best example of a multimedia classroom was a three-hour seminar on the Vietnam War. Class began with a song from the period, and film clips were used throughout to illustrate key themes or to replicate events. The professor alternated discussion with photographs, tables, and graphics. As a result, most of us were more alert and interested in this class than in previous ninety-minute classes, despite the considerably longer class time.

Instruction
It’s easy to deduce that all this technology has made the Net Generation lazy. We don’t use print dictionaries—we go to Dictionary.com. We don’t walk to the library—we search online journal databases. We wouldn’t know an archive if we stumbled into it on the way to the fax machine. Though the Internet is phasing out
these standard methods of research, they remain important. Most college students, however, have no clue how to navigate or investigate the modern library. Instead, they rely on Web sites and Internet archives, increasing the likelihood that they will stumble across and cite false or incorrect information. For these reasons, faculty and library staff must still teach and demonstrate basic research skills such as finding journals, evaluating primary sources, digging through archives, and even perusing library shelves. Today’s students may believe they can learn solely on the Internet, but they cannot.

Crafting the Online Classroom
Philosophy was my nemesis. For five semesters, I cleverly evaded its call—pointedly skipping over the requirement in the dim hope that a registration glitch might fill the spot. But as graduation grew closer, the empty spot hadn’t budged. With a feeling of dread, I decided to budge instead.

As I dutifully joined the roll for Philosophy 205, my only consolation was that Introduction to Philosophy was finally being offered as a Web-based course. I had never tried an entirely “virtual” class before, thinking such endeavors were better suited to distance education students or those with full-time jobs. But philosophy? That could be an exception.

The class was set up with trust in the student. Reading assignments from the text were listed on the course Web site. For grading, we were asked to periodically turn in homework questions from the text and to take occasional quizzes and exams. Every exam was open notes and open book, with a three-hour window of time. The homework was loosely graded.

For the first exam, I read every chapter and highlighted the notes from the study guide. I finished the test in less than thirty minutes. For the second, with the full weight of a sixteen-hour semester upon me, I did the reading but skipped the highlighting. I finished in an hour. For the next exam, with two test experiences under my fingertips, I skipped the reading altogether and simply searched for the answers in the text. The test took nearly two hours. Each time, the grade was the same. By the end of the semester, I couldn’t tell the theory of relativity from utilitarianism. But speed-reading? I was a master.

The professor had assumed, while crafting his course, that putting the content on the Web would give his students more flexibility to shape their own learning experience. We could read at our own pace. We could respond to message threads at our leisure. We could even take tests with the full support of our text and our notes. What he hadn’t expected, perhaps, is that the advent of the Internet and the opportunity of the online classroom had not diminished the need for traditional educational principles such as discipline, engagement, and interaction. Instead, my online course had turned “learning” into exactly what I despised: a one-dimensional exercise in regurgitating facts.
A counterexample was a Web-based course in Latin American history. As in my philosophy course, we were asked to read from an assigned text. But instead of taking quizzes and tests, we were asked to periodically turn in essays and papers. The main difference was that each week we were required to participate in online discussions relevant to our text or to readings found on the Web. Some weeks, we were required to simply post our responses. Some weeks, we were to counter the arguments made by others. Some weeks, we were to evaluate and critique our classmates' arguments. Though completing the exercises seemed effortless at the time, they held us accountable for the reading and engaged us in the material.

As technology improves and the “virtual classroom” becomes more popular, there is a tendency on the part of institutions and students to turn to online courses. Web-based classes save institutional resources and can accommodate more students. They are more flexible for students who have busy schedules or who commute. But as these examples demonstrate, the online class must be crafted with the same care and expectations as are used in the traditional class.

Students crave interaction with others in the class. The professor must find a way for the students to interact. Discussion forums are a natural solution and can be facilitated by posing questions for students’ response and discussion. The professor must be an active participant and facilitator, however, or students will diminish the importance of the exercises. Another solution is virtual group work. Asking students to collaborate on projects or assignments forces them to meet and exchange ideas with their peers and fulfills their need for group interaction without actually meeting in a classroom.

Students also want diversity in both content and content media. Since most online courses create a class Web site for posting assignments and logging in to take tests, these sites could be used as portals for multimedia exploration: video, audio, photographic archives. The Web-based course is at an advantage visually. Net Gen learners are more likely to respond to visual images than to straight text. From childhood, we have been bombarded by images on television, on billboards, in magazines, and on the Web. Teaching the Net Generation therefore requires the use of visual images in conjunction with text, a feat easily accomplished through animation and diagrams on the Web.

It’s a common misconception that students take online courses to avoid the rigor and workload of a traditional class. When students choose an online classroom, they still want to be challenged. They still want exploration. And they still want creativity. Net Gen learners are not likely to excel in an environment in which we are simply handed material and expected to recite it back. Most of us log on to online courses because we despise this traditional format of lecture and regurgitate. We feel we learn better in an environment in which we can teach ourselves. The online professor should therefore find ways to offer students a method of exploration and research within the curriculum. Students might be asked, for example, to abandon the course Web page in order to search an archive or journal for information. They might be asked to weave current events within the context of the course material. Or they might be required to use their own technical savvy to construct research Web pages or blogs.

The simple rule is to engage the students, to move them beyond being mere participants in the class to becoming active learners and discoverers.

Unplugging Instructors’ Fears
As the question hung in the air, none of us looked into the crowd. We frantically searched each other’s faces and shuffled our feet. Someone had to answer the question. We knew that much. But none of us wanted to touch it. “I’ll repeat the question,” the professor said from the crowd. “How do students use technology to cheat?”

Finally, one of the student panelists lifted her gaze and cleared her throat. “Actually, I don’t really know of any instances of students using technology to cheat on my campus.” The other student panelists let out a collective sigh of relief. At least someone had answered the question. The problem was that we all knew the answer
wasn't true. Students cheat. Students have always cheated. And technology has made cheating only easier.

Slowly, with a little more prodding from the audience, our answers started spilling out. “Sending cell-phone text messages.” “Finding old papers on the Internet.” “Trading computer programs over e-mail.” “Paying someone to log in to an online test.” “Using copy-and-paste.” As we ticked off the cases, the audience—mostly faculty and administrators—went from being interested to horrified. “Are you serious?!” one asked. We sheepishly shrugged.

Like most other changes in society, the technological revolution hasn't come without casualties. Academic integrity is often—prematurely—singled out as one of the most devastating. When choosing to integrate technology in a class or to launch an online course, faculty must move past the fear that students will use the technology only to cheat or to minimize their workload. Just as the sexual revolution launched a new set of rules for residence hall life at colleges and universities, the Internet revolution demands fresh thinking about academic integrity and classroom etiquette.

**IT Code of Conduct**
From sending cell-phone text messages to using the copy-and-paste feature for online text, willful students have found that the technological age has created plenty of loopholes for integrity. But cheating fears shouldn't stop professors from using technology in the classroom. Instead, they should encourage a closer look at the way technology is used and at the rules outlined to govern it. As technology continues to advance, administrators, faculty, and students need to rethink aging codes of conduct and include rules for technology usage. (One of my professors, for example, expressly stated in the syllabus that cell phones were not to be visible in class.) Likewise, faculty, students, and conduct officials need to stay abreast of cheating trends and need to clearly and consistently outline what constitutes plagiarism and academic integrity infringement.

**Classroom Etiquette**
As soon as the second bar of the song “Mexican Hat Dance” bounced off the laboratory walls, everyone in the entire class froze in place. “Where is it?” the professor asked, chalk stopped in mid-flourish. “Where is it?” Out of the corner of my eye, I watched as a ponytail-topped sophomore slowly eased her fingers into her bag and deftly clicked off the noise. Her face never moved.

“Told you all about that noise,” the professor said, his voice slowly hitting soprano. “Now, where is it?” He had indeed told us about that noise. Many times. But despite his warnings and threats, someone's cell phone would always ring during our fifty-minute class.

Another technological faux pas was committed by four girls in the second-to-last row of my biology course. With a lax rule on laptop usage, they spent the entire class period chatting on IM or shopping at jcrew.com, oblivious to the fact that their constant clicking was sparking heated discussion among the inhabitants of the last row. “Do you really think she can wear a size that small?” someone whispered. “Well, even if she could, that is so not her color.” Had there been an extra-credit question on the various colors available for a pair of overpriced chinos, I have no doubt the back row could have aced it. As for all those genetic disorders questions that were on the quiz, well, we were more than a little lost.

One of the many problems that today's professors face is getting the upper hand in a classroom filled with distractions—from cell phones to iPods to PDA games. Today's technologies give a new coat of paint to age-old techniques for classroom disengagement. Instead of whispering, we text-message. Instead of doodling, we surf the Web. And instead of daydreaming, we listen to music after running the cords of our MP3 player through our hooded sweatshirt.

Professors shouldn't hesitate to call students' bluff, either by walking through the classroom to glance at screens or by asking pointed questions during the lecture or discussion. Web browsing can be kept to a minimum by directing students to a particular Web site for information, photos, or simulations. Making technology part of the classroom experience will
diminish the opportunity for surfing. It’s also not a bad idea to set some ground rules for technology usage: for example, stating that cell phones and PDAs must stay stored out of sight. Technology will take over the classroom only if the professor lets it.

E-Life: The Net Gen on Campus

“Do you have a check? You could pay by check.” I scratched my head as I stood at the counter. Check . . . Check . . . I vaguely remembered seeing an unused checkbook somewhere in the trunk of my car that morning. But even if I could locate it, I couldn’t be sure that I even remembered how to use the darn thing.

“Are you sure you can’t take a debit card? Or maybe a credit card? I have Visa. Or Mastercard. Is that better?” She smiled sympathetically and pointed to the sign behind her: CASH AND CHECKS ONLY.

I sighed and grabbed my application from the countertop. I needed to add money to my campus account but didn’t have the energy to walk across campus to the ATM or to fish my checkbook from my trunk. Dejected, I pushed my way out the door. Just as I left, I heard familiar words from another student at the counter. “Cash? I have a debit card. Or could you take my credit card?”

Most Net Gener use technology to navigate even the most mundane chores in life. Thanks to online banking, we no longer balance our checkbooks. Because of ATM cards, few of us know what that memo line on checks is even for. We pay bills online. We order books online. The thought of doing anything in person is not just scary for us, sometimes it’s downright confusing.

Each new class of Net Gener will have technology to thank for removing one more obstacle from their everyday lives. My older sister, for instance, remembers sleeping outside the registrar’s office to be first in line to register for courses during her sophomore year. I have registered for courses only online—in my pajamas, from the comfort of my dorm room. As technology replaces these exercises in our daily life, we expect our colleges and universities to follow suit.

To make campus and student services more accessible and accommodating for the Net Generation, staff and administrators must first realize the depth to which technology has revolutionized our daily life:

Plastic or plastic? Cash is rapidly disappearing from our wallets, replaced by credit and debit cards. We use these cards to make purchases in stores, to pick up tabs in restaurant, and even to swipe at drive-through restaurants. We pay our bills with them and do our shopping with them. In many cases, students will simply avoid establishments that refuse to accept credit and debit cards.

For customer service, press Ctrl+Alt+Delete. Thanks to the marathon waiting times and the tasteful elevator music of customer service hotlines, the Net Gen would much rather log on than call to fix problems or seek advice. Surfing Internet help lines for assistance solves two of our problems: speed and accessibility. It's often much faster to find the solution in an online troubleshooter than to wait for an operator to read from a textbook. It's also more likely that online help can be found on any day, at any time. There are no closing times online and no hours of operation.

Dear Dr. Jones. It's not that we can't use the telephone or find an office, it's just that doing either is so much more difficult. Using e-mail to set up meetings, ask simple questions, or send in excuses for absences has become so commonplace that few students turn to anything else. E-mail is less personal and less frightening. Students don't have to worry about saying the wrong thing or getting flustered. They can carefully craft messages and spell-check the result. It's much easier to take risks and push the envelope without hearing disapproval or confronting anger. For that reason, the Net Gen will turn to e-mail for everything from job inquiries and applications to meetings with administrators. (As a former college newspaper editor, I was shocked to learn that my reporters had even resorted to conducting interviews entirely over e-mail.)

ATTN: School is closed. When breaking news hits, students in the Net Generation are more likely to log on to a news Web site for the latest information than to turn on CNN on the television. When we get dressed in the morning, we check WeatherBug or the local television Web site for the day’s weather prediction rather than wait for a forecast on the morning news. When we need information, we expect it immediately, and we seek it ourselves.

Net Gener aren't expecting the college or university campus to be the technological equivalent of a science-fiction movie. What we hope, however, is that student services will evolve to reflect the changes we have undergone as passengers on the Information Superhighway:

Cashless on campus. By refusing to accommodate Net Gener, who do not generally carry cash, campuses place us in a perilous position, stripped of resources when we might need to pick up supplies, make a few copies, or purchase a meal on campus.
debit cards, and/or offering secure online transactions with credit cards. In the future, more campus services—such as student ticket sales, printing kiosks, and campus eateries—should accommodate debit or credit cards.

- **Immediate communication.** Because Net Generators have learned to seek and expect information at the touch of a button, it is simplest for campuses to disseminate information in a similar fashion. When inclement weather strikes, for instance, a mass e-mail will reach students before a ticker on the bottom of the local network news. Students will check their e-mail before class instead of checking their voicemail or a classroom door for notes posted there. Campuses should place less emphasis on phone lines or verbal communication and more on using e-mail and Web sites for the rapid distribution of news, warnings, and alerts.

- **Constant access.** Net Generators access services anytime, anywhere. We have grown accustomed to paying bills after midnight or shopping after two o’clock in the morning. Late classes and schedules bulging with club activities, jobs, and study sessions often mean working late into the night. As a result, students have come to demand twenty-four-hour access to campus services such as health care, dining, Internet troubleshooting, and libraries. Students’ current habits demand a new evaluation of hours of operation and staff accessibility, whether in person or on the Web.

- **Face time.** The Internet has enabled faculty, students, and administrators alike to communicate with more people on a daily basis, while actually seeing only a few of those people. As an administrator once lamented, “I can help thirty students each day over e-mail exchanges, but I rarely get the opportunity to meet them.” Yet the constant glow of a computer screen and the cacophony of clicking keys have left the Net Generation longing for more face-to-face interaction with faculty and administrators. Despite the ease of online communications, faculty and administrators should continue to make a concerted and sincere effort to offer true face time to students and to arrange meetings so that genuine, real-time discussions, which are often stifled online or through inbox communication, can occur.

**Outlook for the Future**

I arrived home from the university last December to meet a sullen, unresponsive teenage boy: my brother. As I watched him plant himself in front of the computer each night and rush, in between chores, to “check his buddy list,” I couldn’t help but pull rank. “You know, in my day, we used to call our friends over winter break. And we had to actually have our friends over to play games; we couldn’t just do it on the Internet,” I said. He rolled his eyes. “Right, right, I know. And your cell phones only made phone calls.”

Suddenly, I felt quite old. The truth is, I haven’t called a friend just to chat since my freshman year. But the technology that revolutionized my university experience has transformed my younger brother’s middle and high school experience. The technology that captivated my imagination as a teenager is a “fossil” in his eyes.

The next generation of learners will raise only more questions on college and university campuses. Their lives will be that much more reliant on technology, their attention spans that much shorter. They will have little concept of checkbooks and scant recollection of landline telephones. Their needs and their values will require a reevaluation of the concepts noted here. By the time this next generation arrives on campus, the Net Generation will be relics: members of the first generation of Internet youth, students who attended college when the Web was still new, page loading was still slow, and landline telephones were still in use.